APRIL 4, 1936

Railway Age

Founded in 1856

APR 7 1936

Transportation Library

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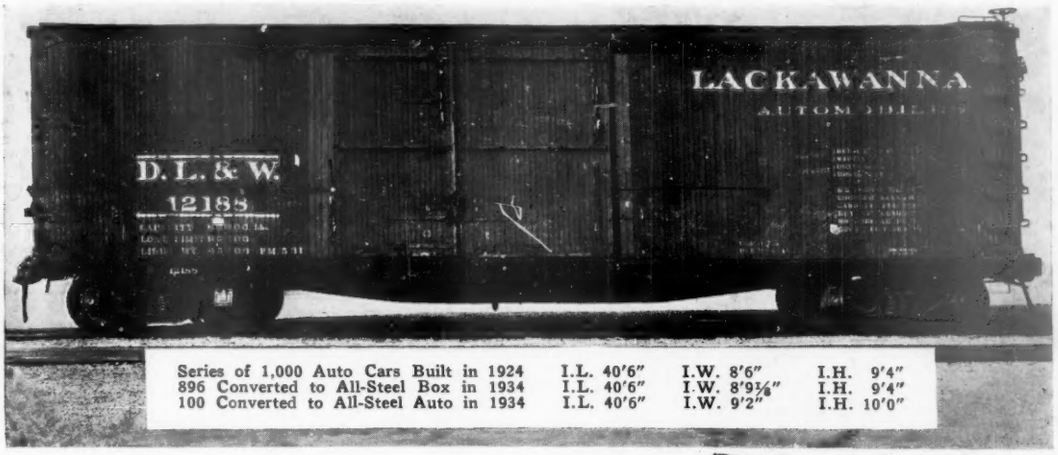
Originally--Wood Superstructure

1924 Dimensions



Series of 1,000 Auto Cars Built in 1924	I.L. 40'6"	I.W. 8'6"	I.H. 9'4"
896 Converted to All-Steel Box in 1934	I.L. 40'6"	I.W. 8'9⅛"	I.H. 9'4"
100 Converted to All-Steel Auto in 1934	I.L. 40'6"	I.W. 9'2"	I.H. 10'0"

High Maintenance

Modernized with Youngstown Steel Sides

TRANSPORTATION

1936 Dimensions

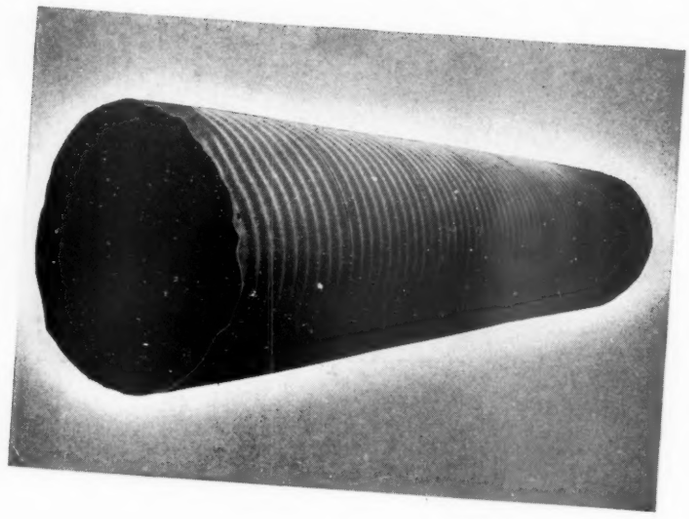
Sample of 100 All Steel Automobile Cars Converted in 1934 from Wood Super-Structure Automobile Cars Built 1924. Grab Irons and Safety Appliances Re-used.

Low Maintenance

Now--All Steel

YOUNGSTOWN STEEL DOOR COMPANY

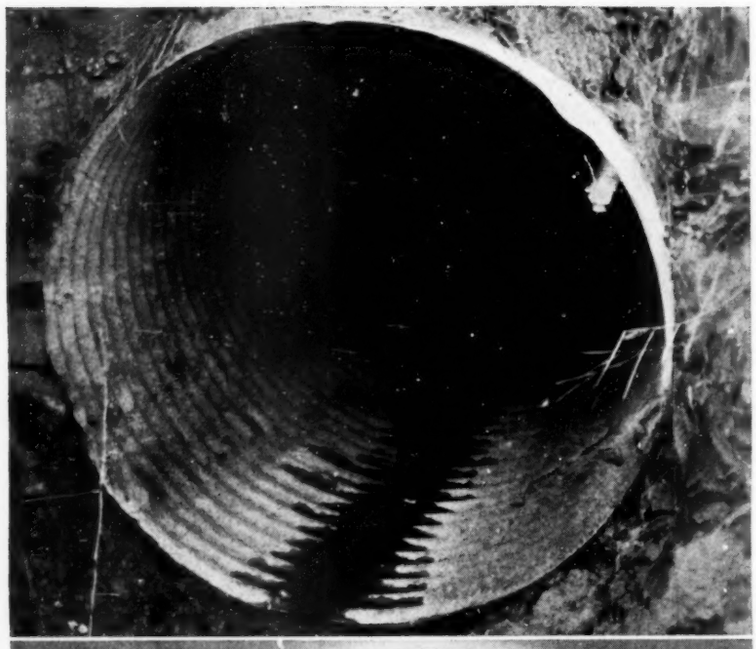
Cleveland Chicago New York Youngstown



Here's the first corrugated pipe—made and installed in 1896, near Crawfordsville, Ind.—removed for exhibition, after 28 years in the ground.

3 *Events*

THAT MADE DRAINAGE HISTORY



IN 1896: Many of the objections to existing types of drainage structures were eliminated by the invention of corrugated metal pipe. Its long, light-weight sections brought about immediate savings in hauling and installation costs. Moreover, due to its flexibility and sturdy joints, corrugated pipe soon proved its ability to stand up where other types couldn't take it. And it has continued to prove its superior strength *for 40 years.*

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Above: After 30 years of service, this ARMCO pure iron culvert is still functioning 100%.

Below: ARMCO Paved Invert Pipe—paved where the wear comes, with a special bituminous material.

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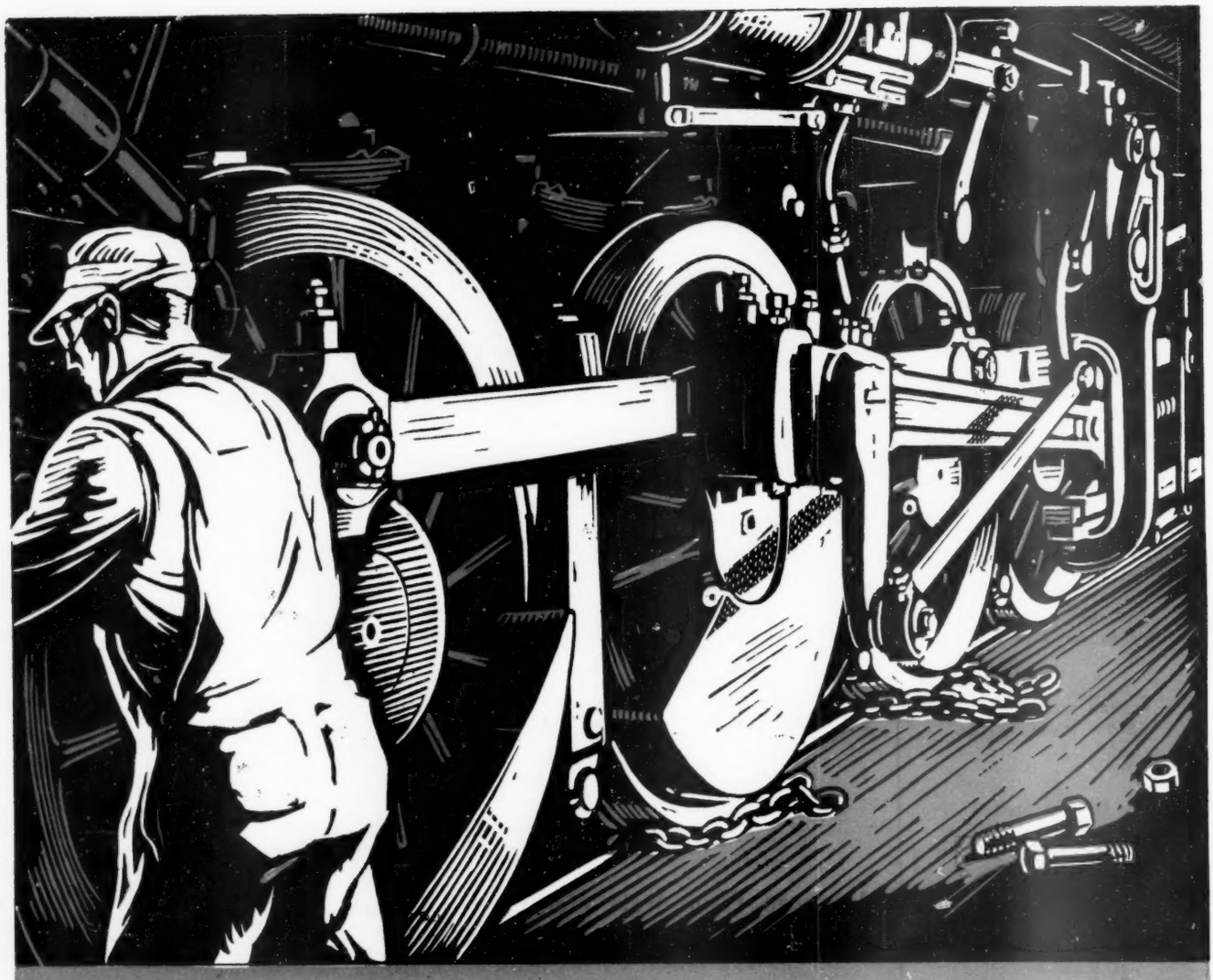

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RAILWAY AGE

An Automotive Manufacturer Discusses Transportation Policies

The annual report of the General Motors Corporation is an interesting document. Not only does it reflect the growing activities of one of the country's largest and most successful industries, but it includes also the reflections of the management on matters of general economic policy. The position of the executives of this vast enterprise is so influential that the opinions on matters of national economic policy which they urge upon their stockholders and, through the press, upon the country generally are matters of public concern. These opinions are particularly important to the railroad industry because they bear directly upon governmental policies with respect to transportation.

Following an enumeration of the asset side of the ledger for highway transportation, the report concludes that just about everyone benefits enormously from such service and then proceeds to state that, in the view of the General Motors Corporation, "two important questions of policy arise in which the economics of transportation are importantly involved." Of these, the report says:

> Governmental regulation of transportation by rail developed out of the necessity for protecting the public against monopolies. There has resulted the exercise of remote control through bureaucratic interference with free enterprise so vitally essential to progress. This, together with the effect of the political consideration upon the economics of our railroad systems, is a factor importantly contributing to their present unfavorable position.

Say Regulation Preserves "Relics of the Past"

> During the year the federal Motor Carrier Act became effective—the purpose of which is the regulation of the rates and the practices of certain classes of motor carriers of freight and passengers moving in interstate commerce. This act expands the jurisdiction of the Interstate Commerce Commission to transportation by highway. The Congress of the United States now undertakes to apply the same type of regulation to highway transportation that it has previously applied to transportation by rail. And it is reasonable to suppose that the final result will be substantially the same. Instead of giving the national economy the benefits of this new, flexible, and more economical form of transportation, with the resulting benefit in a lower cost of goods and services, the tendency will be to throttle its efficiency and limit its effectiveness to the now existing standards. The accepted standards of transportation cost will be the yardsticks of the past. The consideration of existing facilities, including relics of the past, will tend toward a disregard of the possibilities that engineering and manufacturing progress offers in the form of lower transportation costs.
>
> Instead of the deadening hand of strait jacket governmental regulation, would it not be wiser to establish each agency on its own foundation of fact and effectiveness and permit each to develop its maximum contribution to the national welfare? This would restore the principle of free enterprise and encourage the exercise of individual initiative. That is the real road to progress.

What Are Facts as to Highway Costs?

> There is hardly any problem of national concern before the community at the moment in which there is any greater misconception as to fact than exists with respect to the question of the taxation of the highway and the highway user. The highway user enjoys a valuable franchise in the use of our wonderful system of national highways. There can be no question as to that. There can be no question, either, as to the economic justification of those users, as a group, bearing the cost of the facilities which their general use demands. The sole question to be determined is: What is that cost?
>
> Manifestly, in dealing with a problem so great, it is highly essential that the facts be made available and that these facts be developed on the basis of an unprejudiced, disinterested examination of all the circumstances. Fortunately, such information is available.

The above quotation is a temperate statement of the position of the automotive industry in which we find much with which we can heartily agree. In particular do we subscribe to the principle that each agency of transportation should be established "on its own foundation of fact and effectiveness" and permitted "each to develop its maximum contribution to the national welfare." But we cannot agree that the problem is so simple and relatively so near to adjudication on its merits without regulation as the General Motors management appears to believe.

"Fortunately," says the report, "information [as to the proportion of the cost of highways borne by highway users] is available." It then quotes from the three-year-old "Coolidge" committee report on transportation and the Brookings Institution statement in behalf of that committee that "on the whole highway users are now paying for those highways which are of general use."

Is Highway Transportation Self-Supporting?

Such a limited citation, in our opinion, is a rather meager basis on which to assume that motor transport is standing "on its foundation of fact" as far as self-support is concerned. The distinction between highways of "local" use and of "general" use is not a

clear one. Neither is there any logical reason why "local" roads should be supported entirely by general taxes rather than by the users. Local railroad lines (i.e., branch lines) are not provided by the community; they yield taxes rather than consume them. Why should local facilities for highway transport be dealt with differently—if our true purpose is to have each agency of transport stand on its own "foundation of fact" as to self-support?

Furthermore, even if highway users *on the whole* may be paying adequately for the use of the roads, it does not follow that such users in every state are paying adequately. Neither does the General Motors report adduce any evidence to show the relative burden of road use levies, and the justice thereof, on the several classes of vehicles. That is to say, even if the contributions of road users *on the average* are fair, payments by some users certainly fall below this average; hence such users fail to pay their own way as free enterprises should in a competitive society. The business which receives a subsidy and advocates free enterprise is in the anomalous position of supporting proposals which are mutually exclusive.

Should Highway Investment Yield Tax Revenue?

Again—although the subject is not broached in the General Motors report—why should not our investment in highway transportation facilities be made to yield taxes (over and above all construction and maintenance costs) the same as investment in railroad and other productive property is made to yield taxes? Can there be any "free enterprise" competition between railway and highway transportation when the plant of the former is heavily taxed and that of the latter is not taxed at all (and probably does not even yield revenues adequate to cover construction and maintenance costs)?

Wages in transportation are not fixed by the government, but the rules under which such questions are to be adjudicated as between managements and employees are fixed by statute for the railroads and not for other forms of transportation, and some railroad working conditions are prescribed by law, with the net result that labor costs of the railroads per man-hour are enormously greater than labor costs of competing forms of transport. Is "free enterprise" competition on a basis of sound economics possible among the various agencies of transport when the cards are thus stacked against one of the principal competitors?

Truckers Favor "Straight Jacket" Regulation—for the Railroads

The railroads have tried to have removed from them the "deadening hand of straight jacket governmental regulation" by repeal of the Long-and-Short-Haul Clause of the Interstate Commerce Act, now pending in the Senate. But railway competitors—the truck and water lines—are fighting the removal of this "straight jacket" from the railroads by every means in their power. The truckers have succeeded, to the accompaniment of great public clamor, in inducing the Interstate Commerce Commission to suspend the railroad collection and delivery tariffs in Eastern territory. The trucks have invaded the long-haul field of the railroads, but the railroads, so the truckers contend, should be prevented from entering the field of local collection and delivery. There is not much "free enterprise" theory discernible in the practice of trucking interests where "straight jacket" principles can be used to shackle the railroads.

A great deal has been said—and is repeated in the General Motors report—about the social and economic advantages of motor transportation. But there are social and economic disadvantages as well, and an unbiased appraisal of highway transportation is impossible if these disadvantages are disregarded. Chief among these is the appalling toll of death and injury on the highways. The cost of this carnage, insofar as it can be reckoned in dollars and cents, is paid only in part by users of the highways in insurance premiums and damage awards. The bulk of the burden is borne by the victims of the accidents. The cost of casualties in railroad transportation is borne by the railroads out of revenues received from their patrons. Is "free enterprise" competition possible between two agencies of transport, one of which bears the burden of the casualties it inflicts and the other of which shifts these burdens to other shoulders?

In sum, while we agree with the General Motors statement as to each agency of transportation standing "on its own foundation of fact and effectiveness," we cannot agree with the tacit assumption which the report appears to make that, save for government regulation, such parity of opportunity would already exist. Rather, it appears to us, highway transportation is the recipient of so many governmental favors that its claim to function as "free enterprise" is hardly logical. The self-supporting adult may be heard sympathetically when he demands freedom to go and to work where and how he will; but the sheltered suckling, the cost of whose maintenance is largely borne by others, can scarcely in reason lay claim to such privileges.

Every Tub on Its Own Bottom

We are in accord with the pronouncement of the General Motors management on the fundamental principle of national policy regarding transportation which, we believe, might be succinctly stated: Every tub on its own bottom. But, carrying that broad principle as a torch into the nooks and crannies of the transportation situation as it actually exists, we submit that it brings to light details of inequity which we have pointed out above and which prove conclusively that not even a beginning has been made in the practical application of the principle. Regulation does not need to be a "straight jacket." Ideally, it might involve nothing more than adjudication of differences between the various agencies of transport—serving as a sort of um-

pire. But the truck interests, by their fight against Long-and-Short-Haul repeal and the furore they raised preceding the suspension by the I.C.C. of the collection and delivery tariffs in Eastern territory, have espoused the "straight jacket" principle of regulation as applied to railroads, and can have little of which to complain if, in due course, that principle is applied also to them.

The propriety of discussing matters of broad public policy in the annual report of a company, as General Motors has done, cannot be questioned. Indeed it is a praiseworthy example which might well be emulated by all important industrial enterprises. Business of any kind touches governmental policies at so many points and business prosperity is so dependent upon such policies, that a discussion of them by corporation executives is as proper a function as is that of the detailed management of the business. As the report says: "The more the people discuss and debate these facts in which they are vitally concerned, the better their understanding and the surer and wiser will be the conduct of our national affairs as affecting human progress and security."

Regulation by Ballyhoo

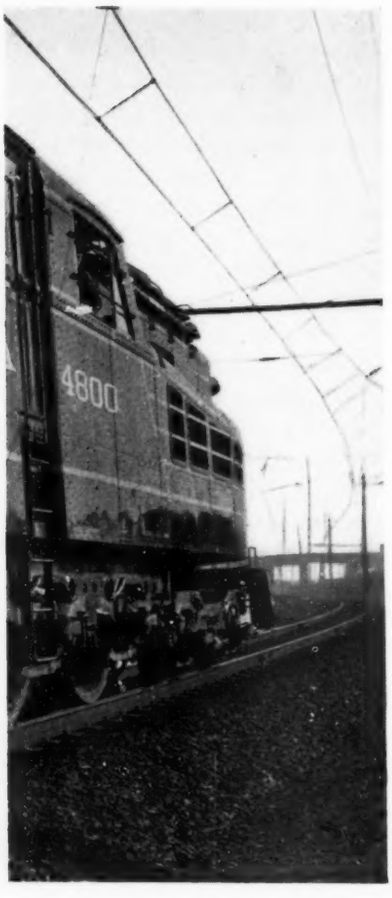
The Interstate Commerce Commission in an eleventh hour action on March 31 suspended the storedoor collection and delivery tariffs of the Eastern railroads which were to have gone into effect on April 1. There was little about the proposed tariffs which differed materially from those of the Western and Southern lines, which were put into effect recently after the Commission refused to suspend them. There was one circumstance, however, about the Eastern situation which *did* differ from that in the West and South, and that was noisy and truculent opposition by Eastern trucking interests, particularly those in the New York metropolitan area. Since this opposition was the only new element of any importance which entered into the Eastern case and since the Commission's decision was a reversal of its previous stand, it is difficult to avoid the suspicion that the Commission was unconsciously swayed by the hysterical bitterness of the truckmen.

Whatever the legal basis of the truckmen's opposition to these tariffs, their real objection lies in the fact that railroad collection and delivery by its very nature takes out of the hands of individual shippers and consignees and places in those of the railroads the selection of local truckmen who perform collection and delivery service. Nothing that the Commission can discover in the seven months' suspension period and no changes which it can make will allay the opposition of the local truckmen. Even if the railroads could show that they could handle this traffic at costs far below those of the local truckmen, this opposition would remain. Indeed, it is likely materially to increase; because only in recent weeks have the truckmen in Eastern territory stirred themselves into action on these tariffs. By suspending the tariffs for seven months in the face of this ballyhoo, the Commission has invited an even larger and more vociferous opposition when the suspension expires.

Storedoor collection and delivery has been discussed for years, and the railroads have been lambasted and damned time out of mind for their failure to institute this service. At long last they prepare to put it into effect; they make all the necessary arrangements; and on the eve of establishment the Interstate Commerce Commission suspends the tariffs for further study. How much study does an innovation on the railroads need anyhow? Commissioner Eastman suggested that the railroads would not be hurt if the plan were held up for a while pending a study of the results attained during the past year by the roads that have had the plan in effect. Well, what have Mr. Eastman and the Commission been doing during the past year that such study has not already been made? Mr. Eastman is very critical of the railroads for their failure to "co-ordinate" their facilities—yet "co-ordination" has been studied and discussed for a much shorter period than collection and delivery. Despite our high regard for Mr. Eastman, we fear that there is more than a little truth in the observation made of him that, by reason of his background, he is more concerned with the niceties of procedure than with results; like the surgeon who reported the operation a success, but that the patient died.

This is the first instance, at least in recent times, where litigants before the Commission have resorted to high pressure political methods to gain their ends. Local trucks all over New York have during the past weeks been bearing such placards as "Suspend the Storedoor Tariff" and "This Truck Protects You from Railroad Monopoly." A large mass meeting was held in New York last week by trucking interests at which fiery speeches were made against the storedoor tariffs; and large sums of money have been spent for inflammatory advertising in the newspapers. Furthermore, a broad hint was circulated that, if the tariffs were not suspended, the truck drivers in the New York area would strike, tying up business generally in the metropolitan area.

We do not suggest that the Commission was consciously intimidated by this activity, but it is evident that the truckmen will attribute the suspension, in large part at least, to the tactics they have pursued. And the result may very well be a larger display of the same strident ballyhoo later on. If the Commission has any concern in the maintenance of its quasi-judicial status, it had better take cognizance of these novel tactics of truckmen litigants and scotch them before they become more extreme. Meantime, all honor to Commissioners Mahaffie, McManamy and Aitchison who dissented from the surprising and portentous action of their colleagues.



The Pennsylvania Has Made Extensive Study of the Relationship Between the Locomotive and the Track

What of the Track?*

Is it keeping pace with the changing demands of transportation? Are greater strength and permanence required?

By Robert Faries

Assistant Chief Engineer, Maintenance, Pennsylvania

THE track structure is fundamental to railroad transportation. It is the physical foundation upon which the great and complicated business of railroad transportation is built. What is its full importance in meeting the growing competition of our day? How can its structure help? Probably the most important duty of the track is to make possible high speed with safety and comfort. Increased speed, or more properly the reduction in time used between terminals, can be accomplished by the elimination of intermediate stops, by the elimination of speed restrictions, by increased acceleration by either increased power or decreased weight of train unit, and finally when necessary by increased maximum speed in unrestricted territory.

The Effect of Speed Restrictions

In order to gain an idea of the value of an unrestricted track, particularly in the new field of higher speeds, you may be interested in reviewing a few of the effects of speed restrictions, based upon actual measurements made in connection with the operation of electrically-propelled trains between New York and Washington. These figures refer to a 30-mile speed restriction ½ mile long, and a 230-ton electric locomotive with 1,000 tons' trailing load. The comparisons shown in the accompanying table are between 75 and 90 miles per hour maximum speeds.

From these figures it can be seen that at the higher speed it takes from two or three times the distance to cover the total territory affected by the speed restriction. If such restrictions are from 5 to 12 miles apart, depending upon the grades, there is no advantage in raising the maximum speed. There is more additional energy used to observe the speed restriction on the descending grade than on the ascending grade when the full energy of the locomotive is used for restoration. This seems to be a paradox, but remember that it is accomplished with less total energy, less time and shorter distance on the descending grade where most of the energy of the locomotive is available for acceleration and where the energy required for the unrestricted speed is very little. This is more apparent if this difference is considered over the retardation territory separately.

Slower Locomotive May Be "Faster"

In a 100-mile run at a speed of 75 miles with from five to seven such speed restrictions, depending on the grade, the elimination of the speed restrictions will accomplish the same result as increasing the maximum speed to 90 miles per hour without elimination of the restrictions. Careful studies developed that an electric locomotive geared for 100 miles per hour would require slightly more time in traveling from New York to Washington than an electric locomotive geared for 90 miles per hour, owing to the relatively greater accelerating ability of the 90-mile locomotive and the relatively greater effect of the speed restrictions upon the 100-mile-per-hour schedule. From a stop on level grade it takes 6 min. and 6.5 miles to attain a speed of 90 miles per hour with a 90-mile-per-hour geared electric locomotive, while it take 22½ min. and 31 miles to attain a 100-mile speed with a 100-mile-per-hour gear. As the maximum speed increases, the disadvantages of speed restrictions increase rapidly.

These tests show the loss in time and energy caused by speed restrictions. The additional energy required is also a measure of the momentum lost in retardation, which is costly through wear on brake equipment. Energy required for the higher speeds indicates the increased cost of operation at these speeds and conversely shows the importance of an unrestricted track. For steam operation, the total energy figures would be

Operating Comparisons—75 and 90 M.P.H. Maximum Speeds

	75 miles per hour	90 miles per hour
Distance affected by the speed restriction: (From start of retardation to completion of restriction)		
On level grade	3.14 miles	6.14 miles
On + 0.4 per cent grade	3.81 "	12.12 "
On − 0.4 per cent grade	2.81 "	4.83 "
Time lost:		
On level grade	1 min. 23 sec.	1 min. 59 sec.
On + 0.4 per cent grade	1 " 30 "	2 " 26 "
On − 0.4 per cent grade	1 " 19 "	1 " 48 "
Total energy used:		
On level grade	256.92 kw.h.	436.94 kw.h.
On + 0.4 per cent grade	350.60 "	877.27 "
On − 0.4 per cent grade	197.99 "	308.31 "
Energy at unrestricted speed: (Total)		
On level grade	91.78 kw.h.	201.17 kw.h.
On + 0.4 per cent grade	192.49 "	673.87 "
On − 0.4 per cent grade	9.74 "	53.47 "
Energy at unrestricted speed: (Per mile)		
On level grade	29.23 kw.h.	32.78 kw.h.
On + 0.4 per cent grade	50.52 "	55.60 "
On − 0.4 per cent grade	3.47 "	11.07 "
Additional energy required on account of speed restrictions above what would be required with unrestricted speed.		
On level grade	165.14 kw.h.	235.77 kw.h.
On + 0.4 per cent grade	158.11 "	203.40 "
On − 0.4 per cent grade	188.25 "	254.84 "

* Abstracted from a paper presented before the Western Railway Club, Chicago, on March 11.

the same, with more loss in time and more distance required by reason of the less-rapid accelerating capacity of the steam locomotive, as compared with the electric locomotive.

Speed restrictions result from several different conditions—grade and alinement as fixed in construction, municipal ordinances, bridges and viaducts, and the physical conditions of the track. Grade and line deficiencies are constantly undergoing improvement when financial conditions permit, isolated restrictions in the middle of a long stretch of open territory and particularly at the foot of long grades usually receiving first consideration. No doubt, the activities in grade crossing elimination will clear up others. With future increases in freight train speeds, speed restrictions which now have little effect upon slower schedules will become of decided importance.

Effect of Track on Equipment

In any consideration of the importance of the track structure its effect upon equipment and lading must be considered. The increase in flange wear, the effect of vibration and the results of stresses and shocks in the car structure, in movements at high speed over poor track are well known and the magnitude of some of these values has been observed. As a measure of the relative effect of good and poor track upon equipment, it was found in tests at Claymont, Del., that maximum lateral forces exerted on good track were of the order of 7,000 lb., whereas when this same track had been artificially roughened to the extent where it was considered necessary to limit regular trains to 50 miles per hour, lateral forces as high as 35,000 lb. were observed with the same equipment and same speed.

Equipment is affected to a great extent by the design of guard rails, frogs and turnouts. The highest blow recorded in our road test runs was due to a guard rail in a terminal and at low speed. The general use of rail oilers has a very marked effect upon equipment. Some years ago I had under my charge an industrial yard where turnouts were short and certain assigned shifting engines worked continuously. It was before the general use of oilers and oil was applied periodically by hand. A few months after this was started the enginehouse foreman made a special trip to the yard to find out what was going on, for the tire work on these particular shifting engines had been largely eliminated.

The necessity for a certain amount of resilience in the track has been shown very definitely during the past winter when frost was very deep. Most of the railroads in the northern part of the country experienced an unusual increase in failures of brake hangers, truck sides, brake pipe and wheels and in excessive heating of journals. Ordinarily the forces existing between the wheel and the rail are partly dissipated by the roadbed. When the roadbed refuses to take any of these blows, the rail and the car structure must absorb them all.

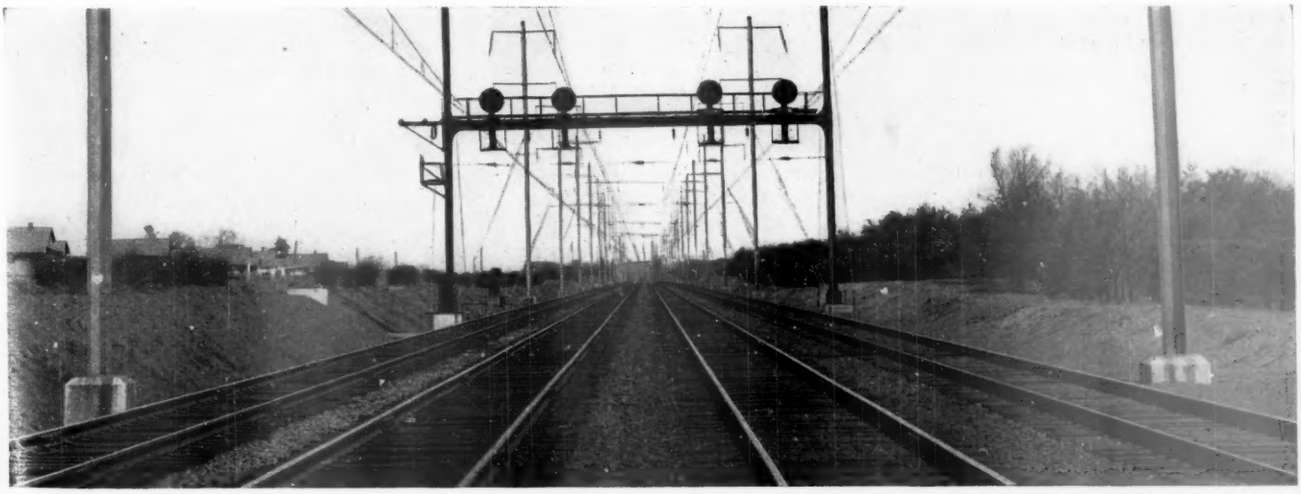
A railroad track is the only facility that provides unit mass transportation on land, but this great and primary advantage could be more effective if it were not handicapped by a certain lack of flexibility which acts against convenience. On the road, interlocking and signaling overcome this to a great extent. In assembly and distribution yards, free movement depends upon well arranged track layouts and freedom from derailments and interruptions. I can report progress in the latter, for in 1928, 2,212 train accidents charged to defects in maintenance cost $2,579,873, or $1.48 per 1,000 locomotive miles, while in 1934, the last year for which I have the figures, 662 train accidents cost $786,040, or $0.68 per 1,000 locomotive miles. The reduction was gradual throughout the years and there is every reason to expect it to continue.

The Track and Transportation

The track structure is important to transportation by reason of the advertising value resulting from its influence on the comfort of the traveling public. The importance of the track in securing and holding passenger traffic is well known. There is no more comfortable and satisfactory method of travel available to the public than rail transportation at its best. Speed with safety, comfort and relaxation all depend primarily upon the condition of the roadbed. On these planned pathways of steel there are no uncertainties. Fog and storm, ice and snow have little effect upon the guided wheel, as was so well illustrated in the severe weather conditions of this last winter.

In examining the relation of track to transportation, we find some effect upon transportation that comes about through the necessary repair work on tracks and bridges, the track occupancy by renewal gangs and the temporary restrictions due to track and bridge work. We engineering officers owe the transportation people the effort to minimize the effect of these restrictions when possible.

By programming work so that several items can be done under the same restriction, the value of the track for transportation purposes is increased. Work trains



A Section of the Pennsylvania Between New York and Washington, D. C., Which, as a Testing Grounds, Has Contributed Much in the Development of a Scientifically-Designed Track Structure

unload new rail and load the rail replaced during the time replacement is being made. Confining work to a single territory in long stretches, rather than having a lot of scattered work, is a transportation benefit. The value of the track structure to transportation is greatly enhanced by signaling which increases its safety and capacity. I would mention particularly the advancement of trains in fog and storm, when there is little or no visibility, by means of cab signals.

Progress Is Necessary

Reviewing the important place that is taken by the track structure in transportation and considering the demands upon railroad transportation for increased speed and convenience for both passengers and freight, it is apparent that improvement in the track structure, extensive though it has been in the past, must be carried forward. What are railroad engineers doing to meet these requirements?

To provide a track structure suitable for the higher speeds now demanded, knowledge is required of just what takes place in the track and in the equipment under these high speeds. Fortunately, instruments have been available for two or three years, capable of measuring stresses under dynamic loads accurately. These instruments have been used by committees under the direction of the American Railway Engineering Association and by several individual roads co-operating with those committees. The instruments can be applied to the track and also to various positions on the locomotive. In order that road data might be obtained at high speeds, locomotives were equipped with stress gages and accelerometers, recording by means of oscillograph continuous photographic records of the lateral forces exerted in both directions at all axles under the locomotives. Numerous road trips at high speed were made, supplemented by trips through yard tracks, to learn the forces resulting from switches, guard rails and sharp curvature. All of these records were studied carefully to note the maximum values and the frequency with which they occurred, together with a tie-up between such values and the particular track conditions which produced them.

Some Surprising Results

Some of the results found are surprising. Dynamic wheel loads have been found to exist that are more than double the static load. In gradually increasing speed over a test track which had certain fixed inequalities of cross level and alinement, the points where minor displacements took place laterally were fixed and the forces causing displacement measured. Different types of equipment have critical speeds at which the maximum effect upon the track structure is noted. A shifting of load between wheels on the same axle was observed, 90 per cent of the entire axle load being carried, momentarily at least, on one wheel.

There was no available knowledge of the forces required to move a track laterally under a locomotive. Static measurements have been made of such forces under various track conditions, weights of rail, age of ties and roadbed conditions. It was found that, depending upon the condition of the track, whether it was newly surfaced or well bedded in the roadbed, the values varied as much as 50 per cent. Lateral forces of 90,000 to 160,000 lb. were required to move the track under one driving wheel less than one inch, and upon the removal of the locomotive from the track it returned to about its original position. It is entirely probable that less force would be required to move the track under the locomotive at speed.

In test, a depression in the rail $\frac{1}{16}$ in. deep and 8 in. long produced a dynamic increase of wheel pressure of 65 per cent at a low speed of 10 to 15 miles per hour, which speed produced the maximum effect for this length of defect. Similar increases in wheel pressure result from flat spots and out-of-round condition of wheels. As a result of the knowledge gained in these tests, changes have been made in both our track and our equipment, which have resulted in lower maximum stresses well within safe limits for the high speeds in the tests.

Changes Made in Tracks and Equipment

The changes in the track consisted of a slight narrowing of the gage to reduce the amplitude of the nosing or hunting, thereby preventing the building up of damaging forces, more exact and longer transitions between tangents and curves, increased superelevation on curves, better design of guard rails and frogs, and the lengthening of turnouts, many in high speed territory being equipped with 45-ft. switches which provide a comfortable speed of 55 miles per hour through the turnout.

Changes in equipment consisted of increasing the load on the trucks to offer greater resistance to the nosing action of the locomotive; attaching radius bars rigidly to the truck, the bar being restrained by springs to prevent rotation of the truck; the substitution of rocker supports for hangers to further minimize the nosing action of the locomotive at high speed, these rockers offering a lateral resistance, equal to 30 per cent of the weight on the truck at the crackoff, increasing to 40 per cent at 1-in. lateral displacement, then decreasing to 20 per cent at 7-in. lateral displacement, as compared with 11 per cent crackoff, increasing to 51 per cent at 7-in. displacement provided by the hangers previously used. Thus, when on sharp curves, as in terminals, the resistance is decreased to avoid excessive lateral thrusts on the track and possible derailment. The effects of some steam locomotives on track were greatly minimized by additional truck and trailer restraint, to avoid having the driving wheels alone resist most of the nosing and tendency toward horizontal rotation.

More Permanent Track Possible

In any material or combination of materials, permanent deformation takes place if the elastic limit is exceeded. The track structure is elastic to some extent, and necessarily so, in order to reduce shocks to equipment, but it is too often stressed beyond its elastic limit and permanently affected, requiring constant maintenance attention. The carefully fixed relation between curvature and superelevation on transition curves requires more permanence in the structure. Otherwise, the continual cost of restoring this relation will be prohibitive.

Is it possible to provide a track of more permanence in which the forces which act upon it do not set up stresses beyond its elasticity? A joint attack upon the problem by track maintenance and equipment representatives is necessary to get the best results. These stresses and shocks observed in the rail and in the axles carry through both track and equipment. They are caused by weakness or defects in both—in the equipment, by excessive axle loads improperly spaced, improper weight equalization, improperly distributed lateral resistance and irregularities in the surface of wheel treads; in the track, by irregularities in the rail surface, wear at rail ends, burns in rail and weakness due usually to the presence of stationary water in the roadbed.

It is not difficult to correct the drainage condition, but it does require some outlay of money. As to the joint problem, there are noted several experiments, particu-

larly on the Delaware & Hudson, which road has pioneered in this direction, in which studies are being made of the possibilities of welding rails together and eliminating joints. A great deal of work is being done on this matter. The results should be interesting and valuable. For the present, roughness on the rail surface and at rail ends is being controlled by grinding and prevented by end hardening of the rails. The fastenings between rail and tie are being improved and it is possible to increase the lateral stiffness of the track by such means.

Increased weight of rail has shown consistently (through increases from 60 lb. up to 130-lb. weights per yard) the value of heavy rail and, after four years' experience with the 152-lb. rail, I can state that there is no let-up in the rate of improvement. This rail for the heaviest traffic and high speed, when in combination with thoroughly drained roadbed, generous ballast section and heavy fastenings, goes far toward attaining permanence of the structure without sacrificing a certain desirable amount of elasticity. By attacking this problem both from the top (the equipment) and from the bottom (the track), we can at least approach some form of permanence in the track structure.

The pioneer railroad men of this country had their problems as we have ours today. They had an abiding faith in the future of American railroads. We would be unworthy stewards of this inheritance if we had less. I believe that their faith is going to be more fully justified in the next few years than ever before.

Railway engineers and railway trackmen, having a full realization of the magnitude and the exactions of the problem, accept the challenge of the times and look forward to the future, confident that, by earnest work upon carefully planned and well tested programs of improvement, the demands upon the track structure to enable it to carry the bulk of the internal commerce of the nation will be met to the full satisfaction of the public.

Commissioner Meyer Opposes Reorganization of I. C. C.

WASHINGTON, D. C.

STATUTORY reorganization of the Interstate Commerce Commission, which has been recommended by Co-ordinator Eastman, was opposed by Commissioner B. H. Meyer of the Interstate Commerce Commission in a talk before the National Industrial Traffic League at Washington on March 31.

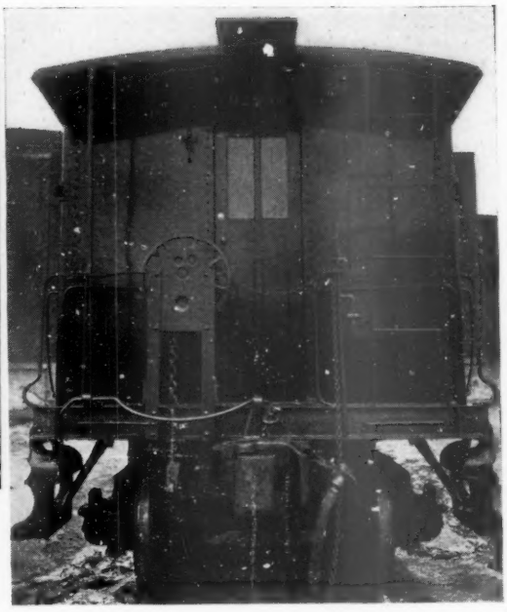
"There has been a glamor and a halo and a mirage about that which seem to have misled many well-intentioned persons," he said, "it is said to be necessary for our own good. Is there a single representative of industry and commerce in this room who has not protested against freezing a rate structure? Why, then, freeze the structure of our organization? After we had been authorized to act through divisions, we issued a general order reorganizing the commission. That was in October, 1917. Since then we have issued 111 orders providing for reorganization in some general or particular respect. I speak of these as orders. It would be more accurate to call them conference minutes, which are in effect orders directed against ourselves. Putting aside the minutes authorizing or requiring minor changes, we have entered no less than 15 of a general character. Suppose Congress, instead of authorizing us to do so, as it did, had established our new organization in 1917 by law. In order to do our work as we have done it, it would have been necessary for us to appeal to Congress to amend the law 14 times. This would have been an imposition on Congress. We reorganized 14 times. As a practical matter Congress could not have done so. We can adapt our organization to our work. Congress can not.

"Let me illustrate. In 1913 we were directed by Congress to make a valuation of common carrier property. Were organized to accomplish that work. We have done the work and are still doing it. In 1920 we were directed to do certain new types of work which I will characterize collectively as finance. We again reorganized. We have done the work and are still doing it. Not many months ago we were directed by Congress to perform certain functions with reference to air mail. Once more we reorganized. We have been doing that work and we are still doing it. More recently the motor carrier law became effective. Again we reorganized. We are doing the work and will continue to do it. We are learning in that newest of fields. In each of these cases we created a new bureau—valuation, finance, air mail, motor carriers. We accomplished our reorganization promptly and effectively and without trouble. What is there in the present situation that makes it impossible or unwise for us to continue to reorganize ourselves as we have been doing in the past when the work before us requires it? Nothing. Furthermore, elements in certain of these plans lead in the direction of political interference. The absolute independence of the commission has been one of its greatest values.

"Finally I wish to say a few words about proposed increases in the number of commissioners. Action through divisions of the commission assumes commissioners in sufficient number to man the divisions. Thus far 11 have sufficed to answer that requirement. All the work we now have we can without the slightest question handle properly with existing numbers. How much additional or new work we can handle with 11 men remains to be seen. I am confident we can handle everything in sight. We will be the first to find out if we can not. We will know before anybody else can know, and when we find out that we need more we will promptly advise Congress and ask for more. The larger the number of commissioners, the more difficult it is to transact business which requires participation on the part of all of them. In our last annual report to Congress we requested authority to create appellate divisions of not less than five members to dispose of certain matters which now require by statute the participation of all the members. The grant of this authority is important. It will be a real aid, and will give us all we now need, whereas an increase in numbers would be a handicap.

"Just as a practical proposition of time, let me call your attention to this aspect. When five men sit in conference and each takes part in the discussion, and the average of time consumed by each is five minutes, the discussion can be concluded in 25 minutes. When there are 11, on the same assumption, 55 minutes are required. This can be applied in many different directions. By way of preface to a few figures which I am about to present, let me say that those figures are independent of the particular membership of the commission at a particular time. What those figures illustrate is a function of numbers uninfluenced in a material way by personal traits of one or more of them. You can not bring together a given number of men without repeating with more or less exactness certain types. These types are representative of the population at large. Action by the commission is

(*Continued on page 576*)



The Side and End Views of the Reading Caboose, Showing the General Arrangement of the Exterior

Reading Builds 25 Cabooses

Steel construction with fabricated welded underframe and Duryea cushion gear provide for safety and comfort—Interior conveniently arranged

THE Reading Company has completed, at its Reading (Pa.) car shops, a series of 25 cabooses, which combine several important features designed to insure safety and comfort of trainmen while on the road. The frame and body of these cabooses are of heavy steel, sheathed on the inside with wood to provide insulation against heat and cold; anti-slip steel treads on the running boards, platforms and steps insuring safe footholds and Duryea cushion underframes to provide a high degree of shock protection against the unavoidable impacts coincident to switching and other phases of freight-train service. The cabooses are equipped with AB brakes and caboose brake valves.

The interior dimensions of each caboose are 24 ft. 4⅜ in. long, 8 ft. 6⅞ in. wide and 6 ft. 6⅜ in. high at the ends. They have four sleeping berths, four cupola seats for observation, lockers, wash stand, water cooler, drop table, desk, stove and tool box.

The cabooses have four-wheel trucks with cast-steel side frames and truck bolsters, 33-in. wheels and 5-in. by 9-in. journals.

The Underframe

The Duryea cushion underframe, which forms the foundation, consists essentially of the structure upon which the caboose body is mounted and the longitudinally movable center-sill member in which the Duryea cushion gear is housed. The center sill member is mounted and guided within the cross-bearers and bolsters of the underframe, but is free to move longitudinally and is connected to the underframe and car body through a spring and snubbing gear located between the center sills.

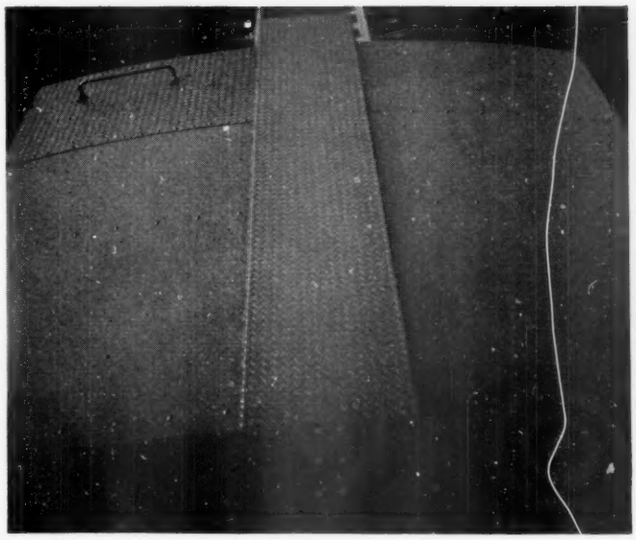
The underframe consists of an all-welded structure having continuous side members made up of 6-in. by 3½-in. by ⅜-in. angles running from platform to platform. The body bolsters are of welded fabricated construction, of box section, with vertical members spaced 7 in. apart and 14-in. top and bottom plates, ⅜ in. thick, running entirely across the underframe. The platform end consists of a 7-in., 17.25-lb. channel with a 3½-in. by 2½-in. by ⅜-in. angle body end sill which is welded to the top of the underframe longitudinals. Diagonals of 6-in., 8.2-lb. channel section are welded between the outer corner and the body bolster connection with the center members at the four corners of the underframe. The middle portion of the underframe is composed of two Z-bar and angle cross-members 6 ft. 7 in. apart between which are a number of angle and Z-bar longitudinals so disposed as to form supports for the air-brake equipment.

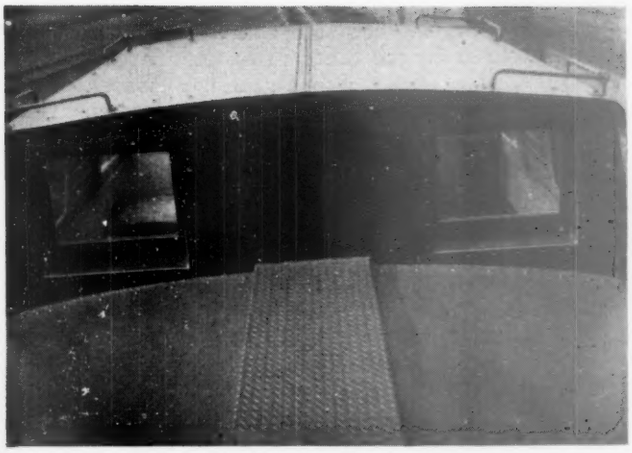
Principal Weights and Dimensions

Weight	42,000	lb.
Truck centers	19 ft. 0	in.
Truck wheel base	5 ft. 6	in.
Wheel diameter	33	in.
Width, over steps	9 ft. 6½	in.
Width, over end sills	8 ft. 8¼	in.
Width, over side frame	9 ft. 2½	in.
Length, coupled	34 ft. 11½	in.
Length, over roof running boards	32 ft. 0	in.
Length, over body end sheets	25 ft. 0 3/16	in.
Cupola length, over body end sheets	6 ft. 7¼	in.
Cupola length, over roof sheets	7 ft. 6	in.
Body length, inside of lining	24 ft. 4⅜	in.
Body width, inside of lining	8 ft. 6⅞	in.

The Center Sills

The center sills consist of two 10-in. channels, placed with the flanges toward the outside, with top and bottom cover plates of ¼-in. steel welded to the channels. The center-sill members are 32 ft. 8 in. over the striking plates. The coupler cushion gears are located at each end of the sill members. The main cushion gear is located just back of one of the trucks and is composed





The Cupola, Running Boards and Platform

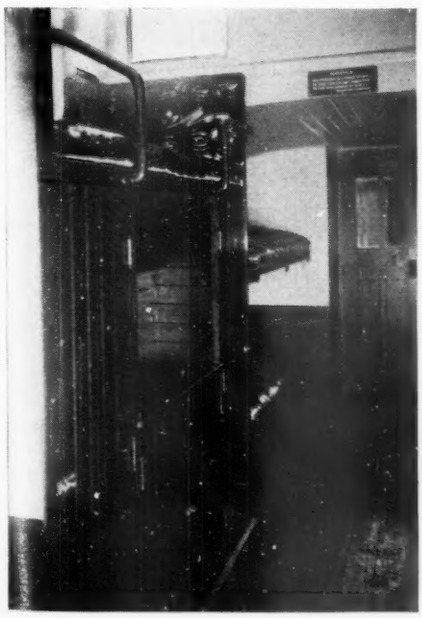
of two silico-manganese coil springs in series. 5⅞ in. in outside diameter with 54 in. free height, 40 in. solid height and 1 11/32 in. diameter bar. These springs are assembled in the gear with 3 in. initial compression. A tension link passes through the center of the coils and is keyed to the body center-brace casting at one end of the gear.

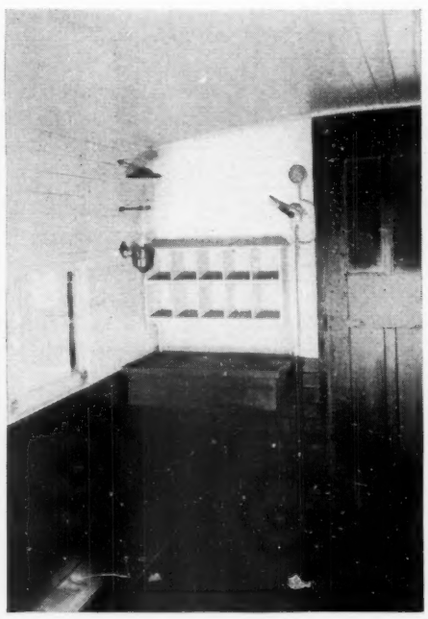
Attached to the rear body bolster center-brace casting is a snubber device which is used in place of the spring gear on the opposite end of Duryea caboose-car installations. This snubs the recoil and increases the capacity of the cushioning gear. It consists of two wedge-shaped cams, one welded to each center-sill channel with four metal snubber shoes held one in each side of top and bottom housings. A snubbing-gear link, pin-connected to the center-brace casting at the rear end, is connected to these housings which are held together by two coil springs 5 7/16 in. outside diameter having 1 11/32 in. diameter bar of 7⅛ in. free height and 6 in. solid height. The combination of springs, spring bolts and spring caps provides the force which holds the four snubber shoes in contact with the snubber cams. The cams have a slope longitudinally from center to ends, on both top and bottom surfaces, so that as the center sill moves forward or backward in relation to the underframe the shoes are forced apart against the compression of the springs thus increasing friction of the shoes on the cams.

Stops are located on the top of the center-sill member at both center-brace castings to limit the travel of the sill member to 10½ in. in each direction.

The Superstructure

The superstructure is of steel frame construction, wood lined. The corner and side posts are 3 in., 6.7-lb. Z-bars riveted at the bottom to the 6-in. by 3½-in. by ⅜-in. angle side sills. The side plate is a 3-in., 6.7-lb. Z-bar 25 ft. 0 in. long. The carlines are 2½-in. by 2½-in. angles, with the ends bent and riveted to the side plate. The side and roof sheets are steel sheets with Alan-Wood, Super-Diamond running boards on the roof. At diagonal corners of the roof are also Super-Diamond platforms, with end ladders from the floor platform to the roof platform and suitable hand holds. There are four windows in each side of the caboose





Left: Bunks, Cupola Seats and Lockers—Center: The Desk Corner, Showing Caboose Valve and Gage—Right: Water Cooler and Wash Stand

and two windows in each side and end of the cupola. Each end door in the caboose has two glass panels. There are no end windows in the body of the caboose. The end platforms have Super-Diamond tread plates. The platform steps are castings, with Super-Diamond step treads.

Description of Interior

The interior of these cabooses is floored and lined with wood. The flooring is 13/16-in. tongue and groove sheathing laid over 1¼-in. flooring, with water-proof paper between the layers. The side walls are lined with 13/16-in. tongue and groove sheathing. At one end of the caboose, there are four bunks, two lower bunks, one on each side of the aisle, 2 ft. 6 in. wide by 6 ft. 8 in. long and two upper bunks 2 ft. 2 in. wide by 6 ft. 8 in. long, which are hinged so that they may be swung out of the way. All four bunks have cushions 4 in. thick covered with 8-oz. black enameled duck, tufted and filled with gray curled hair.

In the center section under the cupola lockers for tools and supplies, and for the use of the members of the crew, are built in under the cupola seats on each side of the aisle. The cupola seats, two in number, run the full length of the cupola and are 5 ft. 6⅜ in. above floor level. These seats are equipped with 4-in. cushions similar to those on the bunks. On the opposite end of the caboose from the bunks, there is a bench 2 ft. wide by 6 ft. 8 in. long on one side of the aisle and in the corner on that side is a desk 21 in. by 31½ in. with a convenient cabinet attached to the rear wall above the desk for reports, etc. The end of the bench is used as a seat for the desk in the corner. On the side wall above the desk there is a Dressel No. 530 side lamp with a 6-in. smoke bell above it. Immediately above the desk on the rear wall, adjacent to the door, is a Westinghouse Type A-1 caboose valve with a pressure gage indicating brake-line pressure, located on the wall above the valve. On the opposite side of the aisle in the same end of the caboose is a caboose stove, adjacent to which is a coal box next to the locker wall. The floor under the stove and the wall behind the stove below the window sills are covered with No. 26 galvanized-iron sheet. The stove is located directly in front of one of the two windows in the side of this section of the caboose. In front of and under the other window toward the end wall is a 22-in. drop table and in the corner there is located an enameled-iron wash stand with a 28-gal. wash water supply tank. Between the wash basin and the door is a 6-gal. drinking water cooler.

Brake Equipment

The cabooses are equipped with the AB brake furnished by Westinghouse. The AB valve, auxiliary reservoir and brake cylinder are mounted on the underframe. The train line is secured to the center sill member by welding and a flexible armored hose provides for the movement between the underframe and center sill.

Commissioner Meyer Opposes Reorganization of I.C.C.

(*Continued from page 573*)

preceded by consideration and discussion. Unanimity on debatable questions means deliberation, understanding of one another's views, and weighing of facts and arguments in order to arrive at just and sound conclusions.

"A dissent means failure of minds to meet and to understand a given situation in the same way. In a sense, and generally speaking, dissents indicate the quality of the deliberations which preceded the decision. With these prefatory remarks, I wish to state these figures. During the thirty years preceding 1917, while the commission was composed of five and seven members there were dissents in 4.09 per cent of all the cases decided. During those years every commissioner was obliged to act on everything before the commission. From 1917, when we were authorized to act through divisions, to about May, 1928, when the commission was composed of nine and eleven members, there were dissents in 39.8 per cent of the cases disposed of by the commission, not including cases disposed of by divisions in which the dissents numbered 6.73 per cent. In March, 1933, I brought these figures more nearly up to date, and by that time the ratio of dissents had become 45.2 per cent for commission decisions and 7.9 per cent for decisions by divisions. Whatever else these figures may show they prove conclusively that the number of commissioners should be kept as small as possible."

Taking up various other phases of the transportation problem Commissioner Meyer also expressed the opinion that loans to railroads by the Reconstruction Finance Corporation will not show a final loss to the Treasury.

"Following the great war, Congress established a revolving fund from which loans were authorized to be made to railroads, as an aid during the transition period," he said. "These loans are generally referred to as Section 210 loans, having been authorized in that section of the transportation act. In round numbers we loaned 350 millions of dollars. About 90 millions of dollars were paid in interest by the borrowers. Something like 25 millions in principal remain unpaid at this time. The final accounting may show some profit to the Treasury of the United States. We have approved slightly less than 500 millions of dollars in loans under the more recent Reconstruction Finance Corporation Act. Not quite all that we approved were made by the Reconstruction Finance Corporation. There remain outstanding today somewhat less than 400 millions of principal. It is certain that there will be losses in this class of loans, but compared with the aggregate amount of the loans I do not believe they will be large.

"I do not expect the final result to show a loss to the Treasury. The members of the commission are not bankers and financiers. All we could do, and what we did do, was to exercise our best judgment with respect to each application for a loan. A safe loan is the easiest loan to make. Almost anybody can do that. Where there exists the slightest danger of loss, the loans will simply not be made; then there will be no loss. Congress could never have intended that principle to be followed in the administration of the Reconstruction Finance Corporation law. Absolutely safe loans only could not have aided the country through the railroads very much. However, the loans were and are loans, not gifts nor federal expenditures."

Commissioner Meyer also called attention to a suggestion he had made 20 years ago, saying, "I would like to have statutory authority to issue orders in tentative form without a hearing. Especially now that we are standing at the very threshold of having to deal with many new situations, affecting five classes of transportation agencies, I believe that my suggestion is deserving of further consideration. I have long been satisfied that wisely used—and that you must assume when the commission uses it—it will expedite business and lessen the cost of doing it. This method can be used without violating rights, as I have explained on other occasions."

Railway Buying Totaled $612,500,000 in 1935

Combined expenditures of all roads for fuel and supplies exceed previous estimate—Larger totals for 1936 in sight

THE *Railway Age* has compiled summaries of railway purchases in which the railroads of the United States, in the aggregate, are shown to have expended a total of approximately $612,500,000 for fuel and material and supplies during 1935, of which approximately $593,150,000 was spent by the Class I railroads and approximately $19,000,000 by the short lines. These purchases are exclusive of new locomotives and cars purchased from equipment builders, also material and supplies furnished by contractors of railway construction, also the value of rail and other material ordered but not delivered during the year.

They are based on reports from more than 200 railroads, including 98.5 per cent of the Class I lines and over 100 separately operated short lines and switching and terminal companies. The summaries show for the first time the combined and classified purchases by the Class I railroads in each of the eight operating regions, and also the short line purchases. Figures computed simultaneously by the Bureau of Railway Economics on the purchases by Class I railroads are also included in the summaries.

The total estimated by the *Railway Age* is approximately $12,000,000 under the corresponding purchases of 1934, and $725,000,000 under the corresponding expenditures in 1929. However, when increased by the value of new locomotives and cars delivered to the railroads in 1935, as compared with deliveries in 1934, and the cost of new equipment and rail ordered too late to be delivered in 1935, as compared with corresponding orders for new equipment and rail during the same months of 1934, it shows a gain in transactions over the previous year. It is to be noted also that purchases in 1934 were financed to a considerable extent with government loans, while purchases in 1935 were paid for almost entirely out of railway funds. The expenditures for supplies in 1935 re-establish the important role played by the carriers as consumers of the products of American industry.

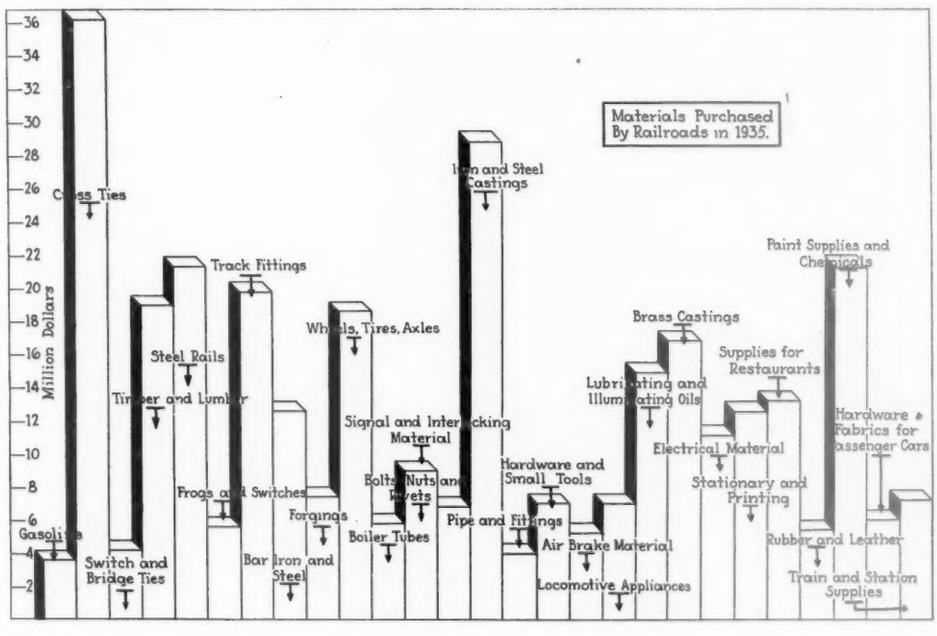
More Money for Coal

Fuel purchased by the railroads last year cost approximately $230,000,000, including $188,687,000 for bituminous coal, $3,644,000 for anthracite coal, $41,000,000 for fuel oil, and $3,402,000 for gasoline. While comparisons with the previous year may not be exact in all instances because of the less complete data available in 1934 for determining the expenditures for some classes of materials, the corresponding outlays for fuel in that

Table I—Railway Purchases Summarized—1926 to 1935*
(000 Omitted)

	1926	1927	1928	1929	1930
Fuel	$473,354	$438,821	$384,608	$364,392	$306,500
Forest products	186,291	175,729	160,794	157,551	134,600
Iron and steel	507,302	432,604	397,544	437,840	329,700
Miscellaneous	392,085	348,774	328,395	369,752	267,700
Grand total	$1,559,032	$1,395,928	$1,271,341	$1,329,535	$1,038,500
Per cent of op. rev.	24.4	22.8	20.8	21.8	20.2
	1931	1932	1933	1934	1935
Fuel	$244,500	$178,250	$179,150	$220,000	$239,213
Forest products	76,250	52,200	41,185	78,300	61,192
Iron and steel	202,100	100,550	112,685	193,105	169,925
Miscellaneous	172,150	114,000	124,730	133,595	142,247
Grand total	$695,000	$445,000	$457,750	$625,000	$612,577
Per cent of op. rev.	16.8	14.1	14.6	18.4	17.1

* 1926 to 1933 Class I roads. 1934-1935 all roads.

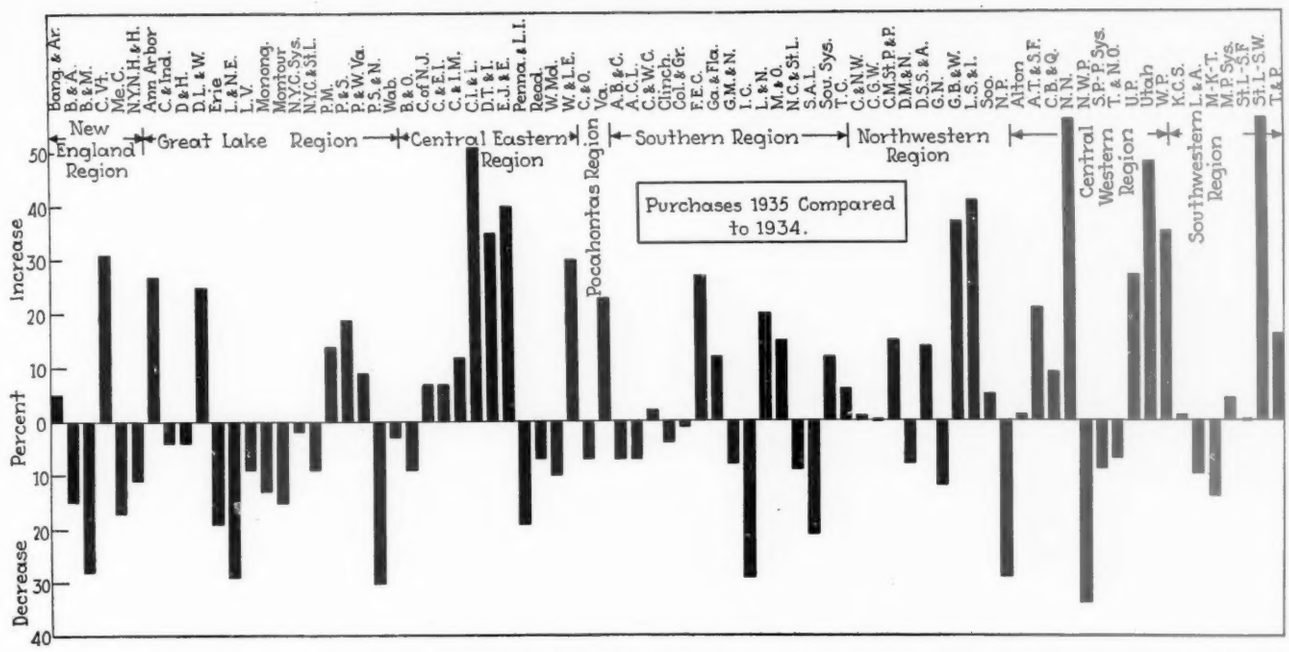


Partial Skyline of Railway Purchases in 1935

Table II. Classified Statement of Purchases of Materials by Railroads in 1935—Estimated*

	New England Region	Great Lakes Region[1]	Central Eastern Region	Pocahontas Region	Southern Region	Northwestern Region	Central Western Region[2]	Southwestern Region[3]	Class I Railway Age	Class I B of R E[4]	Other Roads Railway Age	All Roads Railway Age	Total 1934
FUEL:													
Bituminous coal	$10,690,268	$44,452,646	$36,152,485	$8,245,619	$27,737,549	$25,330,828	$23,196,722	$6,778,992	$182,585,109	$181,656,000	$6,282,180	$188,867,289	$178,700,000
Anthracite coal	76,339	1,898,173	1,566,301	1,534	15,351	31,663	15,803	8,021	3,613,185	3,464,000	31,466	3,644,651	3,200,000
Fuel oil	432,124	339,920	531,616	8,504	975,446	3,632,345	25,092,682	9,592,849	40,605,486	41,995,000	401,568	41,007,054	34,600,000
Gasoline	189,909	433,334	565,854	72,539	393,459	387,132	950,949	349,229	3,342,405	3,001,000	60,537	3,402,942	2,600,000
All other	48,103	615,683	267,137	91,582	167,650	486,376	567,529	9,849	2,253,909	2,607,000	37,200	2,291,109	900,000
Total fuel	11,436,743	47,739,756	39,083,393	8,419,778	29,289,445	29,868,344	49,823,685	16,738,940	232,400,084	232,723,000	6,812,951	239,213,045	220,000,000
FOREST PRODUCTS:													
Cross ties	1,251,778	5,049,199	3,330,326	1,304,620	6,587,053	6,734,330	6,952,057	2,570,412	33,779,775	33,638,000	2,351,925	36,131,700	39,700,000
Switch and bridge ties	119,189	839,713	365,809	264,835	925,680	547,918	553,114	241,893	3,858,151	3,628,000	323,528	4,181,679	4,050,000
Timber and lumber	858,880	2,749,580	2,212,083	636,377	3,123,241	3,415,172	3,347,002	2,217,440	18,559,775	17,178,000	471,580	19,031,355	32,650,000
Other forest products	70,767	83,692	51,835	110,752	295,334	505,336	577,532	144,278	1,839,526	2,923,000	8,403	1,847,929	1,900,000
Total forest products	2,300,614	8,722,184	5,960,053	2,316,584	10,931,308	11,202,656	11,429,705	5,174,023	58,037,127	57,367,000	3,155,436	61,192,663	78,300,000
IRON AND STEEL PRODUCTS:													
Steel rail	172,620	3,701,583	1,110,731	2,750,018	3,189,485	2,436,175	5,415,275	1,578,282	20,354,169	20,576,000	991,838	21,346,007	33,200,000
Wheels, axles and tires	525,767	3,845,419	3,152,151	499,878	2,913,832	1,674,509	3,522,460	1,756,311	17,890,327	17,489,000	724,321	18,614,648	17,600,000
Frogs, switches and crossings	234,011	1,156,034	737,313	573,421	372,243	573,147	1,084,011	406,920	5,137,100	5,240,000	418,333	5,555,433	7,000,000
Track fastenings, bolts, spikes	143,025	3,813,446	1,383,309	1,801,926	2,055,105	3,351,555	3,874,196	3,019,107	19,441,669	18,928,000	373,764	19,815,433	25,400,000
Structural steel for bridges	4,842	294,328	301,407	202,647	215,495	274,535	409,696	372,053	2,075,003	1,849,000	43,578	2,118,581	3,450,000
Bar iron and steel, sheets, etc.	358,027	2,218,302	3,009,609	947,474	2,019,520	1,223,973	1,938,463	1,013,107	12,529,475	11,775,000	156,866	12,686,341	11,650,000
Forgings for locomotives	104,228	185,946	183,815	37,312	148,542	137,685	765,847	142,887	1,706,262	1,821,000	50,242	1,756,504	1,890,000
Forging for cars	71,656	822,874	718,984	1,038,907	383,949	606,044	805,065	1,107,344	5,554,823	5,224,000	90,431	5,645,254	6,410,000
Flues and tubes	79,540	1,310,843	524,917	78,209	565,455	478,667	458,667	347,424	3,843,772	3,684,000	66,536	3,910,308	2,660,000
Interlocking and signal	374,706	1,493,202	1,118,809	474,027	894,095	855,164	1,387,828	464,663	7,062,494	6,378,000	205,989	7,268,483	7,765,000
Telegraph and telephone	51,138	123,853	417,256	68,917	123,904	199,025	243,894	26,724	1,254,711	1,224,000	40,289	1,295,000	710,000
Bolts, nuts, washers, etc.	285,749	1,827,317	1,225,686	242,280	633,978	611,087	1,241,324	622,949	6,690,370	6,100,000	132,809	6,823,879	7,505,000
Springs	14,910	303,875	272,212	197,095	299,278	263,660	272,571	479,003	2,102,604	1,987,000	73,584	2,176,188	2,245,000
Locomotive and car castings, etc.	816,984	5,154,231	3,541,071	1,081,351	2,348,558	2,329,470	6,245,539	2,539,504	24,056,708	22,054,000	732,974	24,789,682	29,800,000
Track and roadway tools, etc.	145,005	664,911	506,732	231,322	591,131	606,274	864,224	469,339	4,078,938	3,757,000	67,762	4,146,700	5,400,000
Machinery and repair parts	14,992	265,890	479,048	154,249	179,115	186,559	484,872	137,688	1,902,413	1,707,000	58,645	1,961,058	2,280,000
Pipe, iron and steel, and fittings	244,951	614,371	800,901	160,201	455,500	431,906	791,894	350,996	3,850,720	3,512,000	141,724	3,992,444	3,300,000
Hardware	102,996	327,631	507,765	98,254	428,502	328,320	431,835	301,515	2,526,818	2,756,000	78,409	2,605,227	4,930,000
Small machine tools	205,058	1,188,382	614,276	159,507	631,423	439,417	795,788	357,814	4,391,665	3,505,000	64,447	4,456,112	1,690,000
Air brake material	145,893	907,493	820,942	520,824	573,873	454,097	1,166,341	532,087	5,121,550	4,709,000	135,895	5,257,445	4,000,000
Appliances for locomotives	266,120	1,828,017	1,122,588	298,341	841,346	702,606	1,301,150	505,112	6,865,280	6,477,000	72,890	6,938,170	5,800,000
Automotive equipment	98,307	1,004,415	486,116	117,926	195,120	313,485	650,056	192,526	3,057,951	2,729,000	5,162	3,063,113	2,640,000
Boilers, derricks and miscellaneous	319,549	740,043	487,054	308,224	502,893	363,288	693,505	240,310	3,654,866	3,433,000	48,187	3,703,053	5,780,000
Total iron and steel	4,780,074	33,792,406	23,522,692	11,942,310	20,562,342	18,840,648	34,745,501	16,963,715	165,149,688	156,914,000	4,774,675	169,925,063	193,105,000
MISCELLANEOUS:													
Cement	13,136	466,781	299,396	133,058	53,193	33,939	160,492	142,927	1,302,922	1,262,000	10,654	1,313,576	1,740,000
Lubricating and illuminating oils	478,315	2,728,545	2,092,140	795,174	2,292,554	1,912,432	2,733,581	1,207,397	14,240,138	13,545,000	600,346	14,840,484	14,900,000
Non-ferrous metals	736,910	4,522,270	1,810,949	560,596	2,218,963	1,556,084	3,399,812	1,477,394	16,282,978	15,149,000	367,134	16,650,112	14,380,000
Ballast	60,256	1,658,318	1,261,687	793,088	1,115,659	279,523	973,732	984,588	7,126,851	6,839,000	112,883	7,239,734	5,750,000
Electrical materials	711,888	717,039	3,667,447	551,794	876,937	977,143	2,091,425	887,648	10,481,321	10,153,000	844,038	11,325,359	7,280,000
Stationery and printing	796,003	1,943,772	3,050,371	623,743	1,830,014	1,228,004	1,924,167	1,041,549	12,437,623	12,334,000	319,526	12,757,149	13,500,000
Commissary supplies	687,460	1,661,025	2,628,620	193,788	1,711,074	1,765,108	3,592,935	857,027	13,097,037	12,964,000	61	13,097,098	12,810,000
Rubber and leather goods	256,590	1,265,021	1,192,958	96,351	537,365	581,448	900,348	362,992	5,193,073	4,952,000	347,983	5,541,056	5,825,000
Glass, paint, chemicals, etc.	1,033,852	3,130,225	4,263,300	1,088,570	2,574,427	1,983,227	5,033,307	2,069,454	21,176,362	19,045,000	476,749	21,653,111	26,800,000
Arch brick for locomotives	105,726	226,088	551,648	192,495	148,038	92,534	433,647	221,877	1,972,053	1,783,000	41,772	2,013,825	1,560,000
Passenger car trimmings	112,496	729,224	948,792	161,157	466,338	1,043,324	2,013,666	380,589	5,855,496	5,556,000	132,236	5,987,732	4,760,000
Train and station supplies	410,809	1,512,688	1,333,689	339,588	583,778	694,424	1,421,663	473,555	6,770,194	6,089,000	400,375	7,170,569	5,725,000
Other materials	696,434	2,799,213	1,750,132	1,723,338	3,005,088	4,238,997	5,768,734	1,620,785	21,603,721	36,350,000	1,053,181	22,656,902	18,565,000
Total miscellaneous purchases	6,099,875	23,360,209	24,851,129	7,252,740	17,413,428	16,385,996	30,447,509	11,727,782	137,538,668	146,021,000	4,706,938	142,246,707	133,595,000
Grand total	$24,617,306	$113,614,555	$93,417,267	$29,931,412	$78,196,523	$76,297,644	$126,446,400	$50,604,460	$593,126,778	$593,025,000	$19,450.000	$612,577,778	$625,000,000
Per cent of oper. rev.	16.7	16.9	13.0	13.9	18.2	19.4	21.9	17.0	17.2	17.2		17.1	18.4

* Includes all direct purchases and transportation charges.
[1] Includes Boston & Albany. [2] Includes O.W.R.R. & N. Excludes S.P. Steamship Lines. [3] Includes T. & N.O. [4] Bureau of Railway Economics.



A Comparison of the Purchases of Fuel and Supplies Made by Railroads in 1935 with Their Corresponding Purchases in 1934

year, as reported by *Railway Age,* were: $178,700,000 for bituminous coal, $3,200,000 for anthracite coal, $34,600,000 for fuel oil, and $2,600,000 for gasoline.

Expenditures for forest products in 1935 totaled $61,192,000, as compared with $78,300,000 in 1934; this total including an expenditure of $36,131,000 for cross ties, as compared with $39,700,000 in 1934; $4,181,000 for bridge ties, as compared with $4,050,000 in 1934; and $19,031,000 for timber and lumber, as compared with $32,650,000 in 1934.

Iron and steel purchases totaled approximately $169,925,000, as compared with $193,105,000 in 1934. The total includes $21,346,000 for delivered rail, as compared with $33,200,000 in 1934; $5,555,000 for frogs, switches and crossings, as compared with $7,000,000 the previous year; $19,815,000 for track fastenings, as compared with $25,400,000 in 1934; and $5,146,000 for track and roadway tools, as compared with $5,400,000 in 1934. Purchases of iron and steel commodities also included approximately $18,614,000 for wheels, tires and axles for locomotives and cars, as compared with $17,600,000 the previous year; $12,686,000 for bar iron and steel, as compared with $11,650,000 in 1934; $7,400,000 for car and locomotive forgings; $3,910,000 for boiler tubes and flues; $6,823,000 for machine bolts, washers, etc.; $24,789,000 for locomotive and car castings; $5,-

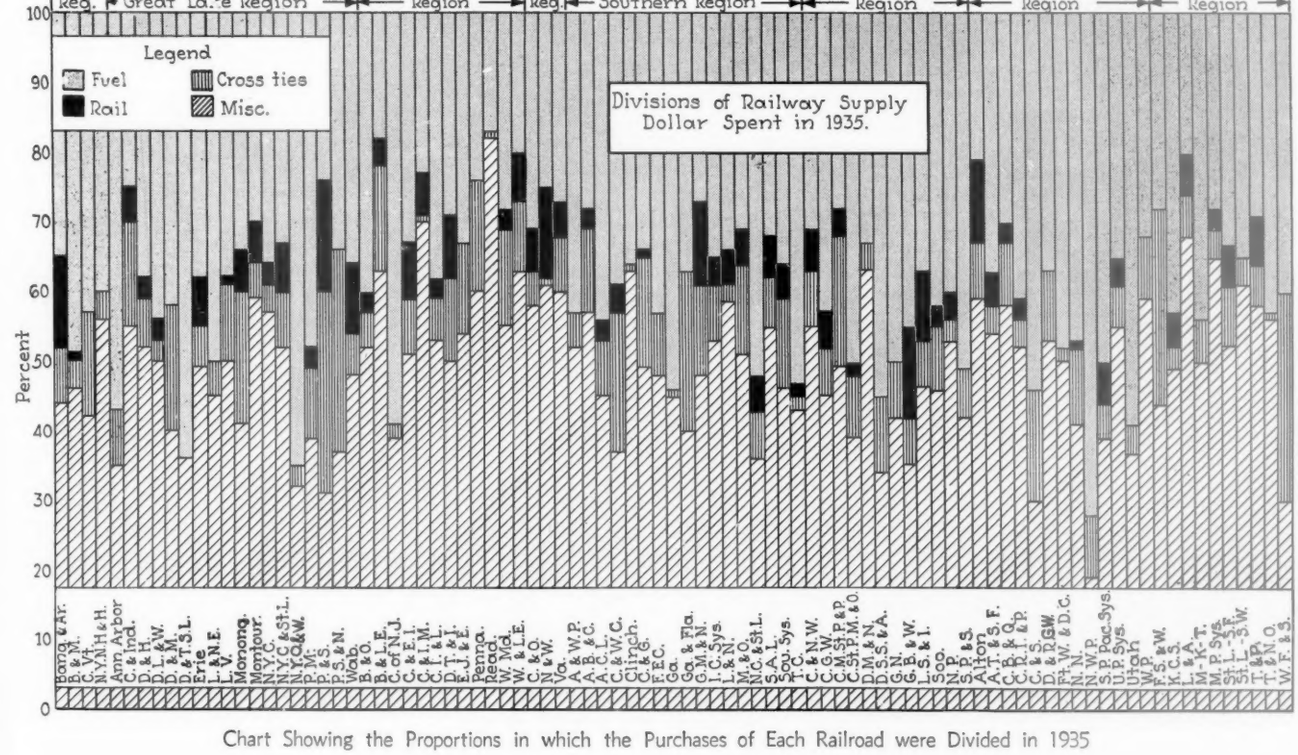


Chart Showing the Proportions in which the Purchases of Each Railroad were Divided in 1935

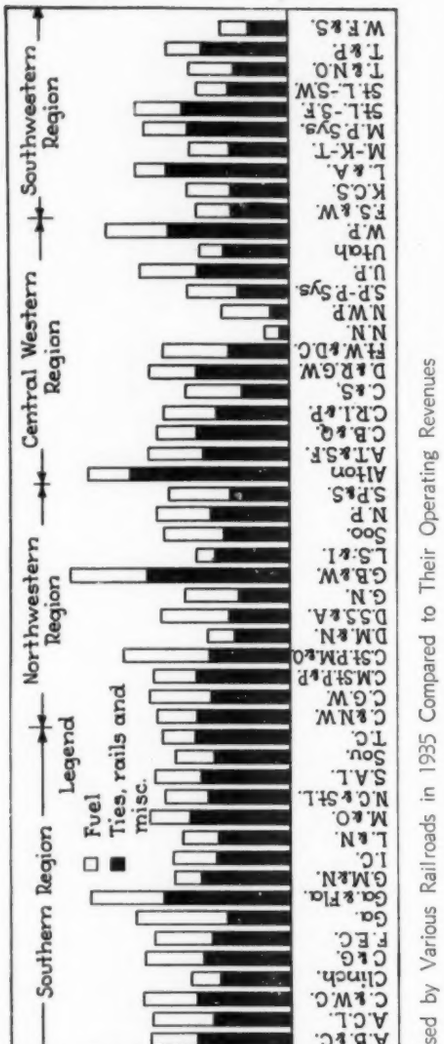


Chart Showing How the Fuel and Supplies Purchased by Various Railroads in 1935 Compared to Their Operating Revenues

257,000 for air brake materials; and $3,063,000 for locomotive appliances.

The railroads also purchased approximately $14,840,000 of lubricating and illuminating oils and similar products in 1935; approximately $16,650,000 of journal bearings and other non-ferrous metals; $11,325,000 of electrical materials; $12,757,000 of stationery and printing; $13,097,000 of commissary supplies; $21,653,000 of glass, paint supplies and various chemicals; and $7,170,000 of train and station supplies.

Based on details reported by the majority of the Class I railroads, there were approximately 84,315,000 tons of bituminous coal purchased by the railroads in 1935; approximately 1,815,000 tons of anthracite coal; 2,158,266,000 gal. of fuel oil; and 4,420,000 gal. of gasoline. Purchases also included approximately 43,323,000 cross ties; approximately 75,000,000 ft. BM of timber and lumber, including switch ties; approximately 595,000 tons of steel rails; 705,000 bbl. of cement; and 14,195,000 cu. yd. of ballast.

Many Roads Buy More

Principally because of increased costs, most of the roads had larger fuel bills in 1935 than in 1934. At the same time, 40 of 82 Class I roads had increased expenditures for ties, rail and miscellaneous materials in the aggregate than in the previous year, although their combined increase was not large enough to offset reductions on the other 42 roads. Reductions amounted to $2,500,000 on the B. & O.; $3,016,000 on the Boston & Maine; $2,856,000 on the Erie; $2,373,000 on the Great Northern; $7,749,000 on the Illinois Central; $3,247,000 on the Missouri Pacific; $2,140,000 on the N. Y., N. H. & H.; $4,053,000 on the Northern Pacific; $12,251,000 on the Pennsylvania lines; and $2,200,000 on the Southern Pacific lines. In contrast, there were increases in purchases from manufacturers amounting to approximately $3,709,000, or 28 per cent, on the A. T. & S. F.; $1,215,000, or 12 per cent, on the C. B. & Q.; $2,129,000, or 19 per cent, on the C. M. St. P. & P.; $1,631,000, or 25 per cent, on the L. & N.; $4,967,000, or 34 per cent, on the Union Pacific; $663,000 or 38 per cent, on the Western Pacific and $602,000, or 34 per cent, on the Wheeling & Lake Erie.

Purchases Larger in West

Purchases by the railroads in the Central Western region in 1935, amounting to $126,446,000 and including $49,823,000 for fuel, $11,429,000 for forest products, $34,745,000 for iron and steel products, and $30,447,000 for miscellaneous supplies, were both larger in the aggregate and in proportion to total operating revenues than in any other region. The sum was smallest in the New England region and bore the smallest relation to operating revenues in the Central Eastern region. The combined purchases in the western district, amounting to approximately $252,000,000, comprised 57 per cent of the total purchases of all Class I roads, 10 per cent greater than the purchases of Class I roads in the eastern district, and more than double the purchases by the Class I roads in the southern district. Iron and steel purchases by Class I roads in the western district were 15 per cent larger than those in the eastern district and over double those in the southern district, and purchases of forest products in the western district, amounting to approximately $28,000,000, are contrasted with approximately $17,000,000 spent by roads in the New England district and $13,000,000 by roads in the southern district. The extent to which freight charges affect these comparisons has not been determined. The supply bill of the Class I roads was 16.7 per cent of operating revenues in the New England region; 16.9 per cent in the Great Lakes region; 13.0 per cent in the Central Eastern region; 13.0 per cent in the Pocahontas region; 18.2 per cent in the Southern region; 19.4 per cent in the Northwestern region; 21.9 per cent in the Central Western region; and 18.0 per cent in the Southwestern region.

Short Line Buying

That the short lines and switching and terminal companies are no inconsiderable factors in the material market is also shown by the summaries compiled by the *Railway Age*. Based on more or less detailed reports from more than 100 companies, the Class I switching and terminal companies and the Class II and Class III railroads whose figures are not combined with the trunk lines are estimated to have spent $19,450,000 for materials and supplies from commercial firms in 1935, consisting of $6,812,000 for fuel, $3,155,000 for forest products, chiefly cross ties, and $4,774,000 for iron and steel products. They bought almost $1,000,000

Table III—Supplies Purchased from Manufacturers, 1935 and 1934*

	1935	1934	Increase Over 1934	Per Cent Increase 1935	Per Cent of Oper. Rev. 1935
Alton	$3,183,420	$3,154,394	$29,026	0.9	22.8
Alton & Southern	123,537	140,262	−16,725	−11.9	...
A. T. & S. F.	17,048,973	13,339,010	3,709,963	27.8	12.6
Atlanta & West Point	273,707	294,466	−20,759	−7.1	9.3
A. B. & C.	426,426	542,698	−116,272	−21.4	13.4
Atlantic Coast Line	4,458,686	5,240,925	−782,239	−14.9	11.4
Charleston & W. Carolina	274,096	270,744	3,352	1.2	14.1
B. & O.	11,843,207	14,378,794	−2,535,587	−17.6	8.3
Bangor & Aroostook	827,695	796,169	31,526	4.0	13.6
Bessemer & Lake Erie	1,367,524		No report		14.0
Boston & Maine	3,409,741	6,426,401	−3,016,660	−46.9	7.8
Cambria & Indiana	81,003	85,922	−4,919	−5.7	7.1
Central of Georgia	2,159,445	1,881,932	277,513	14.7	14.9
Central of New Jersey	1,872,266	1,641,170	231,096	14.1	6.4
Central Vermont	913,036	588,238	324,798	55.2	16.8
Chesapeake & Ohio	9,102,304		No report		8.0
C. & E. I.	1,559,420	1,434,382	125,038	8.7	11.6
C. & I. M.	431,331	376,985	54,346	14.4	13.3
C. & N. W.	10,859,060	10,652,122	206,938	1.9	14.0
C. B. & Q.	11,652,781	10,437,224	1,215,557	11.6	14.0
C. G. W.	1,774,796	1,794,354	−19,558	−1.1	11.8
C. I. & L.	653,123	686,493	−33,370	−4.9	7.9
C. R. I. & P.	7,069,439	6,871,197	198,242	2.9	10.5
C. St. P. M. & O.	1,617,903	1,525,574	92,329	6.1	10.5
Clinchfield	541,315	596,911	−55,596	−9.3	10.2
Colorado & Southern	462,077		No report		7.4
Ft. Worth & Denver City	545,050		No report		10.0
Columbus & Greenville	140,443	145,265	−4,822	−3.3	14.2
Delaware & Hudson	3,066,371	3,270,499	−204,128	−6.3	13.4
D. L. & W.	5,078,518	5,061,614	16,904	0.3	11.3
D. & R. G. W.	2,949,925		No report		14.2
Detroit & Mackinac	105,413		No report		16.1
Detr. & Tol. Shore Line	124,216		No report		3.5
D. T. & I.	719,701	545,359	174,342	32.1	8.9
D. M. & N.	944,119	992,176	−48,057	−4.5	8.2
E. J. & E.	1,200,772	832,025	368,747	45.0	17.0
Erie	6,959,098	9,815,888	−2,856,790	−29.3	8.8
Florida East Coast	854,464	725,354	129,110	17.2	11.1
Ft. Smith & Western	58,459	91,461	−33,002	−36.2	8.7
Georgia	342,877	462,575	−119,698	−24.5	10.7
Georgia & Florida	199,239	188,393	10,846	5.5	18.3
Great Northern	6,332,696	8,706,605	−2,373,909	−27.5	7.8
Green Bay & Western	302,268	187,742	114,526	62.2	21.4
Gulf, Mobile & Nor.	785,095	941,765	−156,670	−16.8	12.7
Illinois Central	10,656,660	18,406,510	−7,749,850	−42.5	11.0
Kansas City Southern	1,035,192	986,087	49,105	5.0	10.4
Lake Super. & Ishpeming	$253,416	$157,515	$95,901	61.0	11.4
Lehigh & New England	241,510	488,668	−247,158	−50.5	7.1
Lehigh Valley	4,176,695	5,074,301	−897,606	−17.8	10.2
Louisiana & Arkansas	890,869	1,079,665	−188,796	−17.5	18.5
Louisville & Nashville	8,009,534	6,378,350	1,631,184	25.5	10.7
Maine Central	1,116,216	1,600,974	−484,758	−30.0	9.2
M. St. P. & S. S. M.	2,391,213	2,515,596	−124,383	−4.5	10.1
D. S. S. & A.	210,682	161,821	48,861	30.0	8.9
Missouri-Kansas-Texas	2,267,012	3,099,511	−832,499	−26.7	8.3
Missouri Pacific	14,828,298	18,075,493	−3,247,195	−17.7	15.4
Mobile & Ohio	1,287,748	1,069,425	218,323	20.0	14.5
Monongahela	209,747	255,870	−46,123	−18.5	5.5
Montour	208,812	267,848	−59,036	−22.0	10.5
N. C. & St. L.	1,482,538	1,763,288	−280,750	−15.7	12.0
Nevada Northern	76,936	51,230	25,706	49.5	18.2
New York Central	32,869,083	31,913,108	955,975	3.0	10.0
N. Y. C. & St. L.	2,298,579		No report		6.7
N. Y., N. H. & H.	6,286,079	8,426,479	−2,140,400	−25.2	8.5
N. Y. O. & W.	457,160		No report		5.3
Norfolk & Western	10,098,833		No report		12.8
Norfolk Southern	716,755	758,748	−41,993	−5.5	15.5
Northern Pacific	6,455,335	10,509,270	−4,053,935	−38.5	12.0
Northwestern Pacific	201,211	263,292	−62,081	−23.5	6.1
Pa., L. I., & S. S. Lines	26,360,053	38,611,588	−12,251,535	−31.7	6.6
Pere Marquette	2,664,398		No report		9.4
Pitts. & Shawmut	104,077	80,224	23,853	29.5	18.4
Pitts. & W. Va.	258,061	235,364	22,697	10.0	8.6
Pitts., Shawmut & Nor.	96,691	163,140	−66,449	−40.5	10.7
Reading	3,047,599	3,874,714	−827,115	−21.0	6.0
R. F. & P.	921,707	857,334	64,373	7.5	14.1
St. L.-S. F.	6,574,184	6,885,056	−310,872	−4.5	15.6
St. L. Southwestern	1,378,642	1,001,202	377,440	38.0	8.8
San Diego & Ariz. East	96,713	75,362	21,351	28.0	22.0
Seaboard Air Line	4,864,478	6,334,331	−1,469,853	−23.5	14.3
Southern	11,566,072	10,682,979	883,093	9.0	10.8
Southern Pac.-Pac. Sys.	10,692,021	12,297,498	−1,605,477	−13.5	9.4
Southern Pac.-T. & N.O.	2,823,299	3,449,879	−626,580	−17.5	8.1
S. P. & S.	556,487	528,816	27,671	5.0	9.1
Tennessee Central	319,113	287,543	31,570	11.2	14.1
Texas & Pacific	3,090,844	2,658,627	432,217	16.2	13.1
Union Pacific	19,486,724	14,519,006	4,967,718	34.5	14.7
Utah	102,514	70,743	31,771	45.0	19.7
Virginian	1,388,790	1,084,950	303,840	28.0	8.8
Wabash	4,285,242	4,807,806	−522,564	−11.0	10.3
Ann Arbor	402,144	282,357	119,787	42.5	10.2
Western Maryland	2,000,697	2,408,196	−407,499	−17.0	13.5
Western Pacific	2,405,108	1,742,100	663,008	38.0	18.6
Wheeling & Lake Erie	2,402,218	1,799,480	602,738	33.5	17.9
Wichita Falls & Sou.	35,145		No report		6.3

* Rail, ties and all other materials. Fuel excluded.

Table IV—Purchases by Class II and III Roads 1935

	Fuel	Miscel.	Total
Akron & Barberton Belt	$17,280	$22,248	$39,528
Akron, Canton & Youngstown	95,313	569,632	664,945
Alaska R. R.	105,770	530,882	462,419
Apalachicola Northern	15,372	26,161	41,533
Atlanta & St. Andrews Bay	38,209	169,633	207,842
Bauxite & Northern	1,614	2,599	4,213
Beaver Valley	1,017	1,120	2,137
Belfast & Moosehead Lake	17,615	8,953	26,568
Big Creek & Telocaset	2,000	2,700	4,700
Bingham & Garfield	8,918	68,247	77,165
Birmingham Southern	41,852	23,871	65,723
Black Mountain	380	940	1,320
Boyne City	2,230	3,328	5,558
Brooklyn Eastern Dist. Term'l	37,140	63,185	100,325
Buffalo Creek & Gauley	6,900	14,700	21,600
Camas Prairie	57,000	55,000	112,000
Carollton	1,371	4,931	6,302
Chicago Short Line	23,111	29,179	52,290
Chgo., Spgfd. & St. Louis	15,328	53,241	68,569
Chicago, W. Pullman & Sou.	42,883	12,598	55,481
Columbia, Newberry & Laurens	28,180	40,941	69,121
Cowlitz, Chehalis & Cascade	3,023	5,917	8,940
Cumberland & Pa.	23,982	51,362	75,344
Cuyahoga Valley	39,332	81,114	120,446
Dansville & Mt. Morris	3,450	1,605	5,055
Dardanelle & Russellville	2,910	1,219	4,129
Davenport, R. I. & Nor. West	1,574	8,994	10,568
Detroit Terminal	121,899	77,668	199.567
East Erie Commercial	1,714	30,505	32,219
East Jordan & Sou.	1,449	378	1,827
Eastland, Wich. Falls & Gulf	1,433	2,714	4,147
Escanaba & Lake Superior	17,851	21,966	39,817
Galveston, Houston & Henderson	26,094	49,216	75,310
Galveston Wharf	13,962	77,103	91,065
Garden City Western	1,534	1,059	2,593
Genesee & Wyoming	9,298	11,029	20,327
Great Western	25,535	42,878	68,413
Gulf & Northern	3,821	1,908	5,729
Hannibal Connecting	1,400	4,543	5,943
Hartwell	3,024	1,732	4,756
Illinois Northern	39,914	11,164	51,078
Indian Valley	3,685	1,374	5,059
Interstate	40,230	177,757	217,987
Kansas City Connecting	2,080	4,050	6,130
Kansas City Terminal	138,857	575,790	714,647
Kellys Creek	5,003	16,829	21,832
Ky. & Ind. T rm'l	297,171	332,143	629,314
Ky. & Tenn.	14,088	8,262	22.350
Ligonier Valley	4,809	11,651	16,460
L. P. & N.	17,440	32,807	50,247
Lorain & Southern	1,666	2,538	4,204
Los Angeles Junction	8,593	14,008	22,601
La., Ark. & Tex.	43,422	164,492	207,914
Louisville & Wadley	1,729	1,646	3,375
Macon, Dublin & Savannah	26,538	88,364	114,902
Manistee & Northeastern	13,224	51,960	65,184
Manitou & Pikes Peak	3,151	3,860	7,011
Manufacturers Railway	21,747	32,776	54,523
Maryland & Pennsylvania	$38,100	$43,205	$81,305
Middle Creek	561	1,296	1,857
Midland Continental	5,176	17,362	22,538
Midland Terminal	67,596	55,439	123,035
Minneapolis, Northfield & Sou.	69,341	68,957	138,298
Min., Red Lake & Manitoba	4,024	2,073	6,097
Minnesota Western	4,458	20,762	25,220
Mississippi Export	12,000	31,000	43,000
Montana, Wyoming & Southern	4,082	28,549	32,631
Nevada Central	4,000	4,000	8,000
Nevada Copper Belt	1,712	682	2,394
New Jersey, Ind. & Ill.	8,669	1,005	9,674
Norfolk & Portsmouth Belt	104,739	54,711	159,450
North La. & Gulf	3,645	24,902	28,547
Northampton & Bath	3,048	20,054	23,102
Okolona, Houston & Calhoun City	5,867	1,217	7,084
Ouachita & North Western	4,278	11,775	16,053
Pacific Coast	14,156	22,557	36,713
Peoria & Pekin Union	121,481	234,996	356,477
Preston	3,348	3,105	6,453
Pullman	14,724	34,540	49,264
Ouanah, Acme & Pacific	43,382	39,229	82,611
Rahway Valley	7,017	19,265	26,282
River Terminal	85,482	46,812	132.294
Rockdale, Sandow & Sou.	1,387	1,794	3,181
St. Joseph Belt	17,209	....	17,209
St. Louis & Hannibal	5,405	13,240	18,645
St. Louis & O'Fallon	2,554	11,028	13,582
St. Louis & Troy	632	1,723	2,355
Sand Springs	21,650	10,459	32,109
Sierra Ry. of Cal.	16,660	34,628	51,288
Sioux City Terminal	13,166	4,611	17,777
South Omaha Terminal	30,282	12,427	42,709
Susquehanna & New York	22,395	20,811	43,206
Sylvania Central	3,100	324	3,424
Tennessee	14,986	44,092	59,078
Term'l RR Ass'n of St. Louis	567,341	592,848	1,160,189
Toledo Terminal	85,252	51,511	136,763
Tonopah & Goldfield	16,283	50,460	66,743
Tonopah & Tidewater	7,827	28,601	36,428
Tuskegee	1,892	2,491	4,383
Uintah	20,334	22,418	42,752
Union Term'l—Dallas, Tex.	14,416	15,071	29,487
Union Term'l—St. Joseph, Mo.	....	5,379	5,379
Ventura County	584	2,836	3,420
Verde Tunnel & Smelter	18,372	29,922	48,294
Virginia Blue Ridge	1,513	1,992	3,505
Warren & Saline River	7,551	3.150	10,701
Wash., Ida. & Mont.	21,709	30,681	52,390
Wichita Northwestern	4,179	5,578	9,757
Williamsport & North Branch	7,392	3,827	11,219
Winchester & Wardensville	4,451	10,652	15,103
Winston-Salem Southbound	20,334	34,196	54,530
Wadley Southern	3,683	1,311	4,994
Wrightsville & Tennille	20,813	18,512	39,325
Total	3,150,353	5,562,536	8,712,889

of steel rails; approximately $725,000 of wheels, axles and tires; approximately $780,000 of track materials; $250,000 of signal, interlocking, telephone and telegraph materials; $735,000 of machinery and repair parts; $135,000 of locomotive appliances; $600,000 of lubricating and illuminating oils; and $367,000 of non-ferrous materials. Although the ratio of the purchases made by these roads to their operating revenues varied widely, it appears in general that the average division of the revenue dollar spent by the short lines for materials is larger than is the average on the trunk lines.

The trend of railway buying was upward from January, 1935, to March and then downward through September, since which the rate of buying has again been on the increase. While the total volume per month during 1935, measured by the value of fuel and supplies, failed to reach the sums expended in the summer months of 1934 when purchases with PWA funds were heaviest, the total for fuel and supplies in December, based on reports received by the *Railway Age* from co-operating railroads, was approximately $50,750,000, as compared with $50,500,000 in October, $45,000,000 in September, and $40,000,000 in December, 1934. This total was substantially exceeded in January of this year when the aggregate value of fuel and supplies received by the railroads amounted to approximately $56,500,000. This was an increase of approximately $15,000,000. or 25 per cent over the corresponding purchases in January, 1935; about 65 per cent above January, 1933; and 17 per cent above January, 1932; and with the exception of the PWA months in 1934, reflected the largest volume of railway buying in any month since September, 1931.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended March 21 totaled 566,808 cars, a decrease of 50,054 cars as compared with the total for the week before and a decrease of 40,370 cars as compared with the corresponding week of last year. This is the first week this year to show a decrease under the corresponding week of last year, the effect in part of reduced loading because of flood conditions in eastern territory, and also of the seasonal reduction in coal loading, which was 56,465 cars less than that for last year. Loading of all classes of freight except coal and merchandise showed increases as compared with last year. The summary, as compiled by the Car Service Division of the Association of American Railroads, follows:

Revenue Freight Car Loading
For Week Ended Saturday, March 21

Districts	1936	1935	1934
Eastern	126,348	137,995	142,582
Allegheny	89,022	124,453	121,628
Pocahontas	39,987	49,905	47,371
Southern	93,153	98,098	95,957
Northwestern	74,846	66,749	69,042
Central Western	92,476	83,733	84,074
Southwestern	50,976	46,245	49,382
Total Western Districts	218,298	196,727	202,498
Total All Roads	566,808	607,178	610,036
Commodities			
Grain and Grain Products	32,368	25,859	29,884
Live Stock	12,183	10,682	13,643
Coal	83,103	139,568	134,854
Coke	5,826	5,654	7,394
Forest Products	30,403	26,047	24,875
Ore	5,889	4,647	4,378
Merchandise L.C.L.	147,939	160,471	166,598
Miscellaneous	249,097	234,250	228,410
March 21	566,808	607,178	610.036
March 14	616,862	597,431	627,549
March 7	634,828	587,190	614,120
February 29	673,123	604,331	605,717
February 22	586,712	553,165	574,908
Cumulative Total, 12 Weeks	7,306,727	6,888,398	6,954,978

Car Loading in Canada

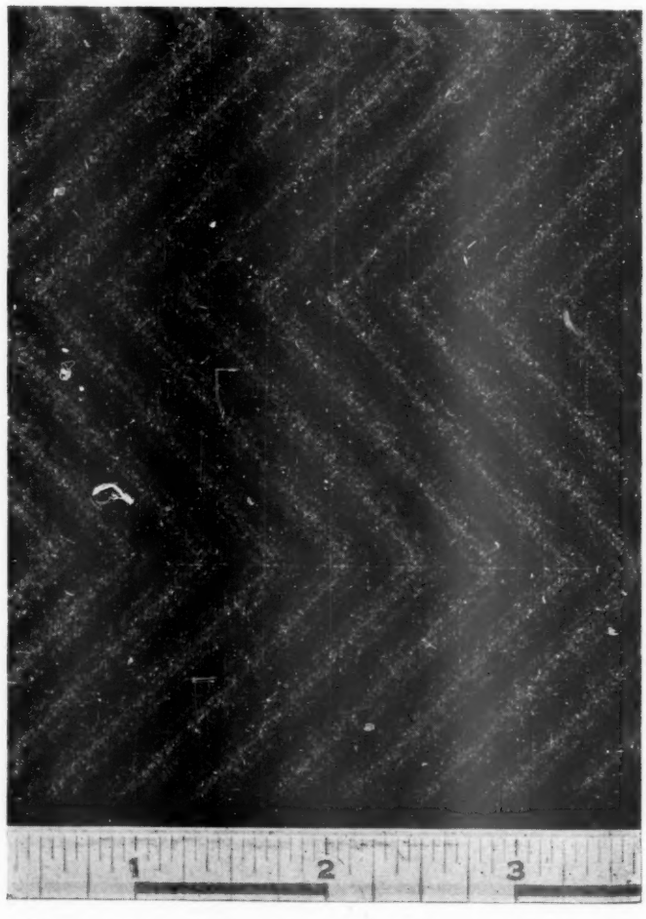
Car loadings in Canada for the week ended March 21 totaled 44,069, or 271 above the total of 43,798 for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
March 21, 1936	44,069	22,263
March 14, 1936	43,823	23,469
March 7, 1936	45,410	24,900
March 23, 1935	43,798	23,753
Cumulative Totals for Canada:		
March 21, 1936	500,219	270,230
March 23, 1935	512,130	272,219
March 24, 1934	491,640	273,493

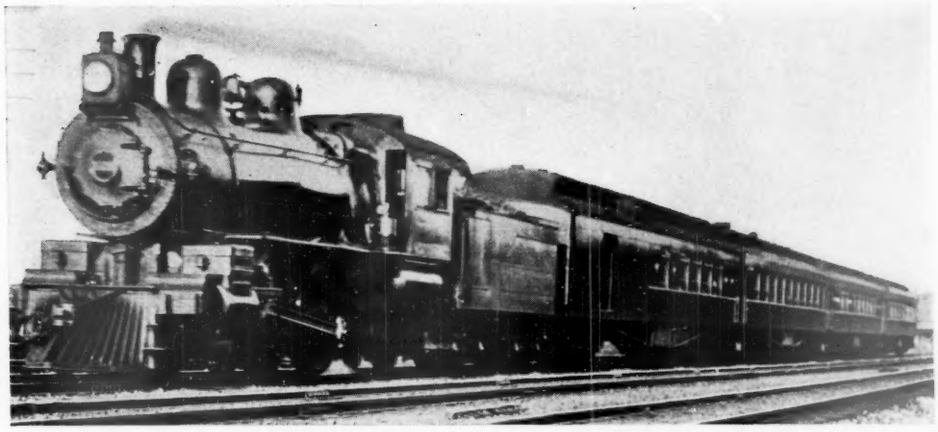
Lock-Tite Mohair Velvet Upholstery Fabrics

A LINE of mohair velvet upholstery fabrics for use in railway coaches and other transportation equipment has been developed by the Collins & Aikman Corporation, New York. These fabrics possess unusual qualities because of the special type of construction em-

(*Continued on page 586*)



Chevron Motif in Three Shades of the Color Selected—The Velvet Photographed Is Peacock Blue



The Pennsylvania Special's Record of 1905 Still Stands

American Trains Hold World Speed Records

Maximum of 127.2 m.p.h. made by a Pennsylvania train in 1905 still stands unbeaten

THE fastest speeds ever attained on rails with standard railway equipment have been achieved by American trains. The world's record of 127.2 m.p.h. was made by a Pennsylvania train traveling between New York and Chicago in 1905. This speed compares with records of 119 m.p.h. in Germany, 115.6 m.p.h. in France and 112 m.p.h. in England. Even more important than this accomplishment of American railroads in maximum speeds are the performances of their daily scheduled trains which likewise surpass those of foreign railroads for speed. A detailed study of the more important regularly scheduled fast trains of America, England, Germany and France will appear in a later issue of the *Railway Age*.

The setting up of speed records by American trains operating on special schedules is not a recent development. As early as 1892, a Central of New Jersey train established a world's record for speed when it covered one mile in 37 seconds, or at the rate of 97.3 m.p.h. The record in England, according to the best data avail-

The World's Fastest Runs

NOTE:—Runs prefixed with small letters are portions of run labeled with capital letter

Date	Railroad	Train	Between	Distance Miles	Time Hr.	Time Min.	Time Sec.	Average m.p.h.
LESS THAN 25 CONSECUTIVE MILES								
1932	German State	Propeller-driven motor coach (not standard equipment)	Near Berlin	.....	..	..	..	143
June 12, 1905	Penna.	Special (now Broadway Limited)	Elida, Ohio—AY Tower	3	..	1	25	127.2
Sept. 27, 1903	Penna.	General Managers Special	Hanna—Wanatah	6.2	..	3	..	124
x—Oct. 23, 1935	C. B. & Q.	Mark Twain*	Near Oxford	3	..	..	..	122
a—Oct. 22-25, 1934	U. P.	M-10001*	Dix—Potter	9	..	4	30	120.1
q—June, 1935	German State	3 Cyl. steam locomotive	Berlin—Hamburg	.....	..	..	..	119
June 12, 1935	P. L. M. (France)	Bugatti*	Connerre—le Mans	.....	..	..	..	115.6
1904	P. & R.	.....	Egg Harbor—Brigantine Jct.	4.8	..	2	30	115.3
X—Oct. 23, 1935	C. B. & Q.	Mark Twain*	Edison—Oxford	7.8	..	4	6	114
1904	Mich. Central	.....		3.75	..	2	..	112.6
May, 1893	N. Y. C.	.....	Buffalo—Rochester	1	..	..	32	112.5
e—May 26, 1934	C. B. & Q.	Zephyr*	Schram	.....	..	..	..	112.5
Sept. 27, 1935	L. & N. E. (Eng.)	.....	Arlesey	.....	..	..	..	112
s—May 15, 1935	C. M. St. P. & P.	Hiawatha	Mauston	3	..	1	37	111.5
w—Sept. 9-12, 1935	A. T. & S. F.	Diesel electric locomotive special	Chicago—Los Angeles	2	..	..	..	111
1934	French State Rys.	.....	Montereau — Fontainebleu.	12.2	..	6	37	110.6
p—Apr. 29, 1935	N. Y. N. H. & H.	Comet*		.....	..	..	..	110.3
Apr. 25, 1935	C. & N. W.	"400"†	S. Randolph—S. Beaver Dam	7.58	..	4	10	109.3
Mar. 1, 1901	S. F. & Western	.....	M. P. 69—M. P. 74	4.8	..	2	40	107.9
W—Sept. 9-12, 1935	A. T. & S. F.	Diesel electric locomotive special	Piuta—Essex	8	..	..	..	107
May 9, 1893	N. Y. C. & H. R.	.....	Grimesville	1	..	..	35	102.8
e—May 26, 1934	C. B. & Q.	Zephyr*	Yuma—Schram	6.39	..	3	50	100.01
j—May 5, 1935	L. & N. E. (Eng.)	.....	London—New Castle	12	..	7	12	100
May 19, 1893	N. Y. C. & H. R.	.....	Looneyville—Grimesville	5	..	3	..	100
Nov. 18, 1892	C. of N. J.	.....	Fanwood	1	..	..	37	97.3
1934	P. L. M. (France)	Automotrice Bugatti*	Montereau — Fontainebleu.	12.2	..	7	37	96.3
May 9, 1884	P. & R.	.....	New York Div.—M. P. 48.	14	..	11	19	74.2
1842	G. W. (England)	.....	London—Slough	18	..	15	..	72

* Light weight Diesel or Diesel electric trains.

† On another trip, the engineman reported the "400" covered 4 mi. in 2 min. for an average of 120 m.p.h. but since the figures cannot be verified, they were not included in the tabulation.

The World's Fastest Runs—Continued

NOTE:—Runs prefixed with small letters are portions of run labeled with capital letter.

Date	Railroad	Train	Between	Distance Miles	Time Hr.	Time Min.	Time Sec.	Average m.p.h.
		25—89 CONSECUTIVE MILES						
a—Oct. 22-25, 1934	U. P.	M-10001*	Cozad—Elm Creek	33.6	..	18	40	108
Sept. 27, 1935	L. & N. E. (England)	Silver Jubilee	M. P. 30—M. P. 55	25	..	13	57	107.5
a—Oct. 22-25, 1934	U. P.	M-10001*	Gothenburg—Kearney	60	..	35	..	102.8
e—May 26, 1934	C. B. & Q.	Zephyr*	Otis—Wray	39.92	..	25	10	95.2
u—July 20, 1934	C. M. St. P. & P.	Milwaukee Express	Russell—Lake	31	..	20	..	93
u—July 20, 1934	C. M. St. P. & P.	Milwaukee Express	Mayfair—Lake	69.9	..	46	2	91.1
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	Coolidge—Sutton	31.5	..	21	..	90
v—May 21, 1935	C. & N. W.	"400"	Kenosha—Deering	48.1	..	32	..	90.2
June 6, 1932	G. W. (England)	Cheltenham Flyer	Swindon—London	77.3	..	56	47	81.7
Apr. 21, 1897	L. V.	.....	Alpine—Geneva Jct.	44	..	33	..	80
June 8, 1905	Penna.	.....	E. Tolleston—Donaldson	50	..	38	..	79
n—1905	Penna.	Special		50	..	38	..	79
May 14, 1905	Atlantic City	.....	Atlantic City—Camden	55.5	..	42	33	78.3
Sept. 14, 1931	G. W. (England)	Cheltenham Flyer	Swindon—Paddington	77.25	..	59	38	77.3
Apr. 21, 1895	Camden & Atlantic City	.....	Camden—Atlantic City	58.3	..	45	45	76.5
V—May 21, 1935	C. & N. W.	"400"	Milwaukee—Chicago	85	1	7	..	76.1
U—July 20, 1934	C. M. St. P. & P.	Milwaukee Express	Chicago—Milwaukee	85	1	7	35	75.5
Nov. 27, 1933	Midi (France)	.....	Paris—Austerlitz—les Aubrais	74	1	..	..	74
Oct. 24, 1895	L. S. & M. S.	.....	Erie—Buffalo	86	1	10	46	72.9
July 9, 1885	West Shore	.....	Alabama—Gen. Junction	36.3	..	30	..	72.6
p—Apr. 29, 1935	N. Y. N. H. & H.	Comet*	Providence—Boston	44	..	37	..	71.4
Aug. 28, 1893	P. C. C. & St. L.	.....	Seymour—North Tower	42	..	35	34	70.9
1932	L. & N. E. (England)	.....	Peterborough—Kings Cross.	74.25	1	4	23	69.2
Aug. 8, 1886	N. Y. C. & H. R.	.....	Syracuse—Fairport	70.25	1	1	20	68.7
Mar. 23, 1933	Est (France)	.....	Chaumont—Troyes	60	..	53	..	67.9
1843	G. W. (England)	.....	London—Didcot	53	..	47	..	67.6
Jan. 21, 1896	S. & R.	.....	Weldon-Shops	76.8	1	12	30	63.6
Aug. 30, 1888	L. & N. E. (England)	.....	York—New Castle	80.5	1	18	..	61.9
Apr. 22, 1882	West Jersey	.....	Camden—Cape May	81.5	1	23	30	58.6
		90—124 CONSECUTIVE MILES						
a—Oct. 22-25, 1934	U. P.	M-10001*	Gothenburg—Alda	94	..	58	..	97.2
e—May 26, 1934	C. B. & Q.	Zephyr*	Otis—Trenton	107.97	1	12	11	89.8
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	Barton—Ingalls	104.2	1	12	..	86.8
i—Dec. 4, 1935	Etat (France)	Bugatti*	Nancy—Strasbourg	93.2	1	4	30	86.7
o—June 11, 1927	Penna.	Lindbergh Special	Baltimore—Philadelphia	96.1	1	13	..	78.9
n—1905	Penna.	Special		100	1	17	44	77.2
r—May 14, 1919	N. Y. C.	No. 4	Millersburg—Nasby Tower.	111.31	1	27	..	76.8
1904	G. W. (England)	.....	London—Bristol	118	1	41	36	69.7
Sept. 4, 1930	Est (France)	.....	Chalons—Vaires	94	1	21	..	69.6
July 9, 1899	D. L. & W.	.....	Bath—East Buffalo	104	1	30	..	69.3
t—Aug. 27, 1925	C. C. C. & St. L.	.....	Granite City—Mattoon	115	1	43	..	67
l—Jan. 22, 1911	Penna.	J. P. Morgan Special	W. Philadelphia—New York	90.5	1	21	..	67
1880	G. N. (England)	.....	London—Grantham	105.5	1	35	11	66.5
May 7, 1896	Mich. Cent.	.....	St. Thomas—Ft. Erie	118.2	1	47	15	66.1
Mar. 10, 1890	P. & R.	.....	Philadelphia—Jersey City	90	1	25	..	63.5
Aug., 1888	L. & N. W. (England)	.....	Preston—Carlisle	90	1	30	..	60
T—Aug. 27, 1925	C. C. C. & St. L.	.....	Mattoon—St. Louis	124	2	6	..	59
June 14, 1880	Penna.	.....	Philadelphia—Jersey City	90	1	33	..	58
		125—149 CONSECUTIVE MILES						
a—Oct. 22-25, 1934	U. P.	M-100001*	North Platte—Alda	129	1	24	..	92.1
e—May 26, 1934	C. B. & Q.	Zephyr*	Otis—McCook	129.57	1	27	20	89
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	Caddoa—Pierceville	131.1	1	31	..	86.4
Sept. 5, 1935	Etat (France)	.....	Paris—LeHavre	140.9	1	41	..	83.7
k—Oct. 24, 1905	Penna.	.....	Crestline—Ft. Wayne	131.4	1	41	20	77.8
s—May 15, 1935	C. M. St. P. & P.	Hiawatha	Milwaukee—New Lisbon	141	1	53	20	74.9
July 29, 1909	N. Y. C.	Century	Toledo—Elkhart	134	1	50	..	73.1
Jan. 28, 1935	Penna.	9-car electric	Philadelphia—Washington	134	1	50	..	73
Apr. 3, 1934	Midi (France)	.....	Vierzon—Paris — Austerlitz	131	1	48	..	73
May 25, 1903	L. S. & M. S.	.....	Toledo—Elkhart	133.4	1	54	..	70.20
R—May 14, 1919	N. Y. C.	No. 4	Elkhart—Toledo	133	1	54	..	70
Sept. 24, 1895	N. Y. C. & H. R.	.....	Albany—Syracuse	147.84	2	10	..	68.2
May 19, 1893	N. Y. C. & H. R.	.....	Syracuse—E. Buffalo	146	2	21	..	62.1
May 19, 1889	P. Ft. W. & C.	.....	Ft. Wayne—Chicago	148.3	2	59	..	49.7
		150—199 CONSECUTIVE MILES						
1931	German State	Propeller driven coach	Hamburg—Berlin	173	1	36	2	108.1
Q—June 12, 1935	German State	.....	Berlin—Hamburg	181	1	42	51	105.6
a—Oct. 22-25, 1934	U. P.	M-100001*	Gothenburg—Duncan	157	1	47	..	88
e—May 26, 1934	C. B. & Q.	Zephyr*	Otis—Cambridge	154.88	1	45	44	87.9
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	LaJunta—Mansfield	159.1	1	57	..	81.6
Nov. 30, 1934	L. & N. E. (England)	.....	Kings Cross—Leeds	185.8	2	31	56	73.4
Nov. 30, 1934	L. & N. E. (England)	.....	Leeds—Kings Cross	185.8	2	37	17	70.9
1904	A. C. L.	.....		172	2	27	26	70
m—June 12, 1935	G. W. (England)	Normandie Special	Exeter—Paddington	172.93	2	31	..	68.7
Oct. 25, 1931	Est (France)	.....	Par-le-Duc—Paris	158	2	19	..	68.2
P—Apr. 29, 1935	N. Y. N. H. & H.	Comet*	New Haven—Boston	156.8	2	22	..	66.2
Sept. 1932	L. M. & S. (England)	.....	Wilmslow—Euston	177	2	43	23	65
Apr. 23, 1899	C. B. & Q.	.....	Clyde—Burlington	197.3	3	4	..	64.3
Apr., 1895	C. B. & Q.	.....	Chicago—Galesburg	163	2	45	..	59.3
June 17, 1886	C. B. & Q.	.....	Princeton—Burlington	170	2	58	..	57.3
Oct. 16, 1891	N. Ry. (France)	.....	Paris—Calais	184	3	43	..	49.5
		200—249 CONSECUTIVE MILES						
i—Dec. 4, 1935	Etat (France)	Bugatti*	Paris—Nancy	219.0	2	30	..	87.6
e—May 26, 1934	C. B. & Q.	Zephyr*	Otis—Kenesaw	246.43	2	51	20	86.4
a—Oct. 22-25, 1934	U. P.	M-10001*	Gothenburg—Lane	232	2	41	..	86.4
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	LaJunta—Dodge City	202.4	2	32	..	79.9
O—June 11, 1927	Penna.	Lindbergh Special	Washington—New York	224.3	3	5	23	72.6
N—1905	Penna.	Special		200	2	48	18	71.3
Apr. 15, 1935	Midi (France)	.....	Bordeaux—St. Pierre	216	3	3	..	71
1904	Mich. Central	.....		225	3	12	51	70
Apr. 27, 1904	Mich. Central	.....	Niagara Falls—Windsor	225.7	3	18	..	68.4
May 28, 1933	Est (France)	.....	Nancy—Paris	219	3	15	..	67.4
June 9, 1904	G. W. (England)	.....	Plymouth—London	246.8	3	46	10	65.30
Sept. 5, 1901	Mich. Central	.....	Susp. Bridge—Windsor	229	3	40	..	62.5
M—June 12, 1935	G. W. (England)	Normandie Special	Plymouth Docks—London	226.77	3	38	..	62.4
Apr. 30, 1900	C. B. & Q.	.....	Burlington—Chicago	205.8	3	23	..	60.8
L—Jan. 22, 1911	Penna.	J. P. Morgan Special	Washington—New York	226.8	3	55	..	57.9
Mar. 10, 1890	Penna.	.....	Jersey City—Washington	226	4	18	..	52.6
		250—299 CONSECUTIVE MILES						
a—Oct. 22-25, 1934	U. P.	M-10001*	Kimball—Kearney	256	2	53	..	88.8
e—May 26, 1934	C. B. & Q.	Zephyr*	Otis—Harvard	276.71	3	17	8	84.3
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	LaJunta—Macksville	263	3	24	..	77.4
K—Oct. 24, 1905	Penna.	.....	Crestline—Clarke Junction	257.4	3	27	20	74.5
Mar. 5, 1935	L. & N. E. (England)	.....	Newcastle—London	268	3	51	18	69.6
Oct. 9, 1932	Est (France)	.....	Belfort—Paris	275	4	6	..	67.1

* Light weight Diesel or Diesel electric trains.

The World's Fastest Runs—Continued

NOTE:—Runs prefixed with small letters are portions of run labeled with capital letter.

Date	Railroad	Train	Between	Distance Miles	Time Hr.	Min.	Sec.	Average m.p.h.
250—299 CONSECUTIVE MILES—Continued								
J—Mar. 5, 1935	L. & N. E. (England)	.....	London—Newcastle	268	3	59	39	67.1
May ? 1935	Alton	.....	St. Louis—Chicago	284	4	54	..	57.9
Aug. . 1897	U. P.	.....	North Platte—Omaha	291	5	35	..	52.1
June 19, 1903	L. & N. W. (England)	.....	London—Carlisle	299.2	5	58	..	50.1
300—399 CONSECUTIVE MILES								
Dec. 17, 1935	Etat (France)	Bugatti*	Strasbourg—Paris	311.9	3	31	..	88.7
a—Oct. 22-25, 1934	U. P.	M-10001*	Kimball—Chapman	310	3	33	..	87.3
I—Dec. 4, 1935	Etat (France)	Bugatti*	Paris—Mulhouse	384.0	4	22	30	86.2
e—May 26, 1934	C. B. & Q.	Zephyr*	Otis—Dorchester	329.31	3	54	8	84.4
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	LaJunta—Solvay	329.4	4	17	..	76.9
1934	P. L. M. (France)	Automotrice Bugatti*	Paris—Lyons	318.1	4	33	..	69.9
July 1, 1935	German State	Flying Cologner*	Cologne—Berlin	355	5	9	..	68.9
Aug. 21, 1895	G. N. (England)	.....	London—Edinburgh	392.5	6	19	..	62.1
Apr. 8, 1927	F. E. C.	.....	Miama—St. Augustine	310	5	8	..	60.4
Aug. 31, 1888	G. N. (England)	.....	London—Edinburgh	392.5	7	26	52	52.7
400—499 CONSECUTIVE MILES								
a—Oct. 22-25, 1934	U. P.	M-10001*	Kimball—Lane	428	4	59	..	85.9
e—May 26, 1934	C. B. & Q.	Zephyr*	Xenia—Ashland	402.05	4	54	35	81.9
Apr. 6, 1935	C. B. & Q.	Twin Zephyr*	Chicago—St. Paul	431	5	33	..	77.7
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	LaJunta—Emporia	428.5	5	45	..	74.5
July 30, 1934	C. B. & Q.	Zephyr*	Chicago—St. Paul	431	6	4	..	71
Sept. 11, 1895	N. Y. C. & H. R.	.....	New York—E. Buffalo	436.32	6	51	56	63.5
Sept. 14, 1891	N. Y. C. & H. R.	.....	New York—E. Buffalo	436.32	7	19	15	59.6
c—July 9-11, 1905	A. T. & S. F.	Scott Special	Kansas City—Chicago	451.1	8	4	..	55.9
July 18, 1932	L. M. & S. (England)	.....	London—Edinburgh	400	7	27	..	53.7
July 10, 1888	L. M. & S. (England)	.....	London—Edinburgh	400	7	52	..	50.9
June 22, 1891	N. Y. C. & H. R.	.....	New York—Buffalo	439.52	8	58	..	49.0
Apr. 8, 1889	C. & N. W.	.....	Chicago—Council Bluffs ...	490	12	30	..	39.2
500—699 CONSECUTIVE MILES								
a—Oct. 22-25, 1934	U. P.	M-10001*	Cheyenne—Tower B, Omaha	507	6	..	..	84.5
e—May 26, 1934	C. B. & Q.	Zephyr*	Otis—Osceola	532.64	6	32	35	81.4
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	Trinidad—Olivet	536.5	7	34	..	70.9
June 13, 1905	L. S. & M. S.	.....	Chicago—Buffalo	525	7	33	..	69.5
h—Jan. 25, 1928	C. C. C. & St. L.	A. H. Harris Special	Granite City—Berea	514.7	7	51	30	65.5
Oct. 24, 1895	L. S. & M. S.	.....	Chicago—Buffalo	510.1	8	1	7	63.6
H—Jan. 25, 1928	C. C. C. & St. L.	A. H. Harris Special	St. Louis—Cleveland	536.1	8	29	..	63.2
Aug. 21, 1895	L. M. & S. (England)	.....	London—Aberdeen	540	8	55	..	60.6
Jan. 2, 1899	C. B. & Q.	.....	Omaha—Chicago	500.2	8	43	..	57.4
Nov. 29, 1897	U. P.	.....	Cheyenne—Council Bluffs ..	519.0	9	19	..	55.7
May 26, 1889	Mich. Central	.....	S. Bridge—Chicago	511	11	41	..	43.7
700—999 CONSECUTIVE MILES								
e—May 26, 1934	C. B. & Q.	Zephyr*	Otis—Chicago	890.57	11	17	..	78.9
g—July 21-22, 1935	U. P.	Streamliner—City of Portland	Bittercreek—Fremont	717	9	31	..	75.3
a—Oct. 22-25, 1934	U. P., C. & N. W.	M-10001*	Cheyenne—Norway	769	10	33	..	72.9
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	Trinidad—Shopton	838.9	12	8	..	69
June, 1905	L. S. & M. S.-N. Y. C.	.....	Chicago—New York	960	15	56	..	60.3
Mar. 28, 1909	N. Y. C.	F. A. Vanderlip Special	New York—Chicago	959	16	30	..	58.1
Dec. 21, 1900	C. B. & Q.	.....	Omaha—Billings	892.6	16	23	..	54.5
1905	N. Y. C.-L. S. & M. S.	.....	New York—Chicago	964	18	..	..	53.6
Aug. 26, 1894	A. C. L.	.....	Jacksonville—Washington .	780.8	15	49	..	49.4
May 8, 1885	L. S. & N. Y. C.	.....	Chicago—New York	964	22	45	..	42.4
1000—1499 CONSECUTIVE MILES								
E—May 26, 1934	C. B. & Q.	Zephyr*	Denver—Halsted St., Chic.	1015.4	13	4	58	77.6
G—July 21-22, 1935	U. P.	Streamliner—City of Portland	Pocatello—Fremont	1021	15	..	..	68.1
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	Trinidad—Chicago	1073.5	16	8	..	66.5
a—Oct. 22-25, 1934	U.P., C. & N.W., N.Y.C.	M-10001*	Cheyenne—Wauseon	1194	18	16	..	65.4
Feb. 15, 1897	C. B. & Q.	Mayham Special	Chicago—Denver	1025	17	27	..	58.7
c—July 9-11, 1905	A. T. & S. F.	Scott Special	Trinidad—Chicago	1073.5	19	10	..	56
Mar. 15, 1925	N. Y. C.-C. C. C. & St. L.	Mrs. Walsh Special	New York—St. Louis.....	1158	22	10	..	52.2
July 6, 1923	C. P.	.....	Winnipeg—Quebec	1579	36	12	..	43.6
1500—1999 CONSECUTIVE MILES								
a—Oct. 22-25, 1934	U.P., C. & N.W., N.Y.C.	M-10001*	Cheyenne—Buffalo	1517	24	12	..	62.7
d—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	Winslow—Chicago	1627.1	27	4	..	60.1
c—July 9-11, 1905	A. T. & S. F.	Scott Special	Winslow—Chicago	1627.1	31	13	..	52.1
2000—2999 CONSECUTIVE MILES								
a—Oct. 22-25, 1934	U.P., C. & N.W., N.Y.C.	M-10001*	Carter—Albany	2177	34	52	..	62.4
a—Oct. 22-25, 1934	U. P., C. & N. W.	M-10001*	Los Angeles—Chicago	2287	38	52	..	58.8
D—Oct. 16-17, 1935	A. T. & S. F.	Diesel electric locomotive special	Los Angeles—Chicago	2227.3	39	35	..	56.3
C—July 9-11, 1905	A. T. & S. F.	Scott Special	Los Angeles—Chicago	2246	44	54	..	50
Nov. 1-4, 1934	C. N.	Car 15820*	Montreal—Vancouver	2937	67	..	..	43.9
Aug. 8, 1903	A. T. & S. F.	.....	Chicago—Los Angeles	2267	52	49	..	42.9
Feb. 16, 1911	S.P., C.R.I. & P., N.Y.C.	C. G. Gates Special	Yuma—New York	2987	74	19	..	40.2
Mar. 27, 1900	A. T. & S. F.	.....	Los Angeles—Chicago	2236	58	..	..	38.6
Aug. 1891	C. P.	.....	Vancouver—Brockville	2792	76	31	..	36.5
3000 CONSECUTIVE MILES AND MORE								
A—Oct. 22-25, 1934	U.P., N.Y.C., C. & N.W.	M-10001*	E. Los Angeles—New York.	3248	56	55	..	57.1
Mar. 9-11, 1924	A.T. & S.F., N.Y.C., B. & A.	Mrs. A. H. Smith Special	Los Angeles—New York...	3197	69	7	..	46.3
May 5-8, 1906	S.P., U.P., C. & N.W., L.S. & M.S., N.Y.C.	E. H. Harriman Special	Oakland—New York	3255	71	27	..	45.6
Oct. 23, 1905	U. P., C. & N.W., L.S. & M.S., Erie	.....	Oakland—Jersey City	3239	73	12	..	44.2
June, 1876	N.Y.C., C. & N.W., U.P., Cent. Pac.	Jarret & Palmer Special	Jersey City—Oakland	3239	84	17	..	38.4

* Light weight Diesel or Diesel electric trains.

able, was then 72 m.p.h. made by a Great Western train which covered 18 miles in 15 minutes. In the following year the Central of New Jersey's record was beaten by a New York Central train which, pulled by locomotive No. 999, covered one mile in 32 seconds, or at an average speed of 112.5 m.p.h. This record stood until 1903, when the Pennsylvania General Manager's Special, a two-car train, covered 6.2 miles in 3 minutes, or at the rate of 124 m.p.h.

Two years later, on June 12, 1905, the Pennsylvania Special, now the Broadway Limited, on its first run on an 18-hr. schedule between New York and Chicago, covered the three miles between A. Y. Tower, Ohio, and Elida, in 1 min. 25 sec., or at the rate of 127.2 m.p.h., thereby establishing a world's record for train speed which has not yet been surpassed on any railroad. On that day, one of the wheels of the tender developed a hot box 20 miles east of Mansfield, Ohio, which delayed

the train and necessitated a change of locomotives at Crestline, Ohio. Locomotive No. 7002 and the four cars, in order to make up the 26 minutes lost time, then traversed the 131 miles from Crestline to Ft. Wayne, Ind., in 1 hr. 54 min. 30 sec., or at the rate of 68.1 m.p.h., and between A. Y. Tower and Elida traveled at the rate of 127.2 m.p.h. This run was reported in the Railroad Gazette (now the *Railway Age*) of June 16, 1905, page 674.

While short runs have established maximum speed records, these records are not of as much significance as some made over longer distances where operating conditions were not as favorable and "slow downs" and stops were made. For this reason, we have divided these fast runs into groups according to distances, the difference in distance between the groups varying according to difficulty of performance. With such an arrangement, it is also possible to include portions of a long run in the groups of shorter distances and thereby reveal the comparative speeds made by these trains over shorter intervals. This study is also arranged to show how much greater present-day speeds are than those of the preceding century.

In this tabulation, American trains hold first place in 12 of the 15 groups, one German and two French trains holding the records in the three remaining groups. American trains also hold second place in all groups but one, in which an English train ranks; third place in all groups but one wherein a French train ranks; and fourth in all groups except two, wherein French trains take this rank.

Outstanding Runs

Of the runs included in the tabulation, that of the six-car Diesel-electric streamliner of the Union Pacific, M-10001, from Los Angeles, Cal., to New York, on October 22-25, 1934, is the most outstanding, for during this 3,248-mile run it established several world's records, as shown in the tabulation, although it was not made primarily for speed purposes, but to test the practicability of the 39¾-hr. schedule on which this train now operates between Portland, Ore., and Chicago, and to determine the feasibility of similarly fast schedules on which its 12-car streamlined trains will operate between Chicago and Los Angeles when delivered and placed in service. Before the run started, the Union Pacific had contracted with the National Broadcasting Company for broadcasts at Los Angeles, Cal., Salt Lake City, Utah, Cheyenne, Wyo., Omaha, Neb., Chicago and New York at specified times. As a result, the train had to adhere to its pre-arranged schedule so as not to jeopardize the broadcasts.

Another outstanding record was made by the Streamliner-City of Portland, the M-10001, in regular service between Portland and Chicago on July 21-22, 1935, when it covered the 1,058 miles from Pocatello, Idaho, to Omaha in 2 hr. 13 min. less than its regular schedule. While the speed on this run did not exceed the average of the Los Angeles-Chicago run of the M-10001 for this distance, it did establish a new record for 717 miles and 1,021 miles for it averaged 75.3 m.p.h. for the 717 miles, including two stops of 6 min., or 76.1 m.p.h., excluding stops.

The run of the Zephyr of the Chicago, Burlington & Quincy from Denver, Colo., to Chicago, on May 26, 1934, is likewise of exceptional interest in that it established several world's records at that time. This run was arranged to terminate at A Century of Progress Exposition which opened in Chicago on that day.

Another outstanding run was that of the Diesel-electric locomotive special of the Atchison, Topeka & Santa Fe from Los Angeles to Chicago on October 16-17, 1935. This was the fourth of a series, two in each direction, made to test a recently delivered 3,600-hp. Diesel-electric locomotive which the Santa Fe is considering for use on its Chief. The locomotive pulled one dynamometer and eight standard cars, weighing 210 tons, and made a creditable speed performance, as shown in the tabulation, in spite of its weight, the crossing of three mountain ranges, 1 hr. 40 min. dead time due to recording and inspection enroute and a speed restriction of 95 m.p.h.

In 1931, the German State Railways constructed a special coach with a propeller at the rear to determine whether the airplane propeller could be used for propelling railway equipment, and this car, on one of its test runs from Hamburg to Berlin, averaged 108.1 m.p.h. while it was reported to have reached a maximum speed of 143 m.p.h. Since the coach was built for experimental purposes and was never used in regular passenger service, its run is included in the tabulation only for general interest.

The Lindbergh Special, operated by the Pennsylvania from Washington, D. C., to New York, on June 11, 1927, to transport motion pictures of the Lindbergh flight in competition with airplane service, made the run of 225 miles in 3 hr. 5 min. 23 sec. Since it was possible to develop the pictures enroute, they were shown at theaters in New York an hour ahead of those transported by airplane.

Still another fast American run was that of the Mayham Special, operated by the Chicago, Burlington & Quincy from Chicago to Denver, on February 15, 1897, to carry Mr. Mayham to his dying son. While enroute from New York, he wired the Burlington an hour before arrival at Chicago to charter the train. With only 45 minutes notice, the train was so made up as to make this record run.

Another outstanding run is that of the Scott Special over the Santa Fe from Los Angeles to Chicago on July 9-11, 1905. This train was chartered by Death Valley Scotty, who wished merely to travel to Chicago in record time.

Still another remarkable run was that made by the Mrs. A. H. Smith Special from Los Angeles to New York over the Santa Fe, the New York Central and the Boston & Albany on March 9-11, 1924. This train was chartered by Mrs. Smith to carry her to her sick husband.

Lock-Tite Mohair Velvet Upholstery Fabrics

(*Continued from page 582*)

ployed. The mohair pile is locked in the foundation fabric by impregnating the latter with a latex compound. This makes it possible to increase materially the density of the pile and seals the fabric against the penetration of dust. The dense pile can be cut low and stands straight out so that there is no change of sheen with a change in the direction of the source of light on the surface.

A large range of patterns and color combinations comprise this line of fabrics. The designs range from the classic chevron to shaded checks and wavy plaids. A number of florals are also available. A variety of pattern and color combinations are readily achieved by the use of plain dye base colors on which the patterns are printed in suitable tone combinations. Patterns in woven colors are also available.

Job Freezing Bill Before House Committee

WASHINGTON, D. C.

ALTHOUGH negotiations as to a plan for paying labor displaced by co-ordination projects are still in progress between committees representing the railroads and the railroad labor organizations, the latter are pressing their legislative plan for accomplishing the same result. Hearings on the Crosser-Wheeler bill, drafted by the Railway Labor Executives' Association, were begun before a sub-committee of the House committee on interstate and foreign commerce on March 30 with testimony by George M. Harrison, chairman of the Railway Labor Executives' Association, who said that labor had despaired of reaching an agreement with the railroads and that the obligation of protecting the employees is on Congress.

Opposition to the bill was expressed on the following day by J. J. Pelley, president of the Association of American Railroads, who said that such legislation would only tie the hands of the railroads and prevent them from carrying out the mandate of Congress to operate efficiently and economically. The bill would give the Interstate Commerce Commission added jurisdiction over co-ordination projects and provide for dismissal compensation for employees displaced as a result of reduction in service or facilities of an individual railroad or the co-ordination of facilities of two or more railroads.

Mr. Harrison, taking as a base a year in which the railroads earned practically no net operating income, told the committee that the portion of rail revenues going to the owners increased 126 per cent from 1920 to 1933 and that the portion going to the employees in that period had decreased 24 per cent. He also criticized the railroads for having increased their capital expenditures and interest charges and for paying dividends, especially in 1930, instead of using available funds to retire their indebtedness.

Although the discussion of dismissal compensation heretofore has been limited to the effect of consolidation or co-ordination projects, the Crosser-Wheeler bill is not so limited, but would apply to any reduction in forces made by a railroad independently.

The bill gives the Interstate Commerce Commission power to investigate and, after appropriate findings of fact, to approve or disapprove, in accordance with the standards set forth, "any action taken or arrangement made by a carrier, either consolidating its facilities independently or with those of one or more other carriers, or entering into any arrangements for pooling or consolidating traffic operations, or any action which may either reduce existing competition between carriers or between carriers and other forms of transportation service, or may reduce the facilities of a carrier for performing public service, or reduce the amount of public service previously being performed by the carrier."

"It is the desire of railroad management," Mr. Pelley said, "to avoid any undue hardship to the employees. We believe this question is one to be handled by agreement, rather than by legislation. Negotiations looking to the protection of men that may be displaced through the co-ordination or unification of facilities of two or more railroads are still under way and should be continued in an endeavor to reach an agreement. A law for that purpose is unnecessary. It can only prevent economies in cost of operation which are in the interest of the employees as well as the railroads. It should be possible to reach a fair and amicable adjustment of this question if the demands of the employees are within the bounds of reason.

"The railroads today are having the greatest struggle of their existence by reason of the unfair competition with their unregulated and subsidized competitors. Congress has now prescribed regulations for motor carriers but these will not be effective in their entirety for some time to come. Subsidized competitors by waterway are only slightly regulated. No one proposes that highway or waterway carriers shall be shackled as railroads would be under this act."

Mr. Pelley said that under this bill an individual road could not close a station, discontinue a train, consolidate its mechanical facilities, or in any way curtail its operations except with the approval of the Interstate Commerce Commission. "Should there be," he continued, "a considerable increase in traffic and as a consequence thereof, an increase in employment, later followed by a decrease in business, the railroads could not make the reductions in service or employment made necessary by reduced traffic. Certainly a railroad with its hands tied by a law of this kind could not comply with the mandate of Congress to operate efficiently and economically. The railroads should not be prevented by law from effecting such economies as will ultimately benefit labor by reason of the increased traffic that would follow decreased cost.

"The railroads, not only in the interest of their security holders but in the interest of their employees as well, are obliged to do everything possible and practicable to reduce costs of operation so as to retain the traffic they now have and to bring back to the rails some of the traffic that has been lost. Such an increase in traffic would increase employment of railroad men. Any policy or any law that prevents the accomplishment of this objective is decidedly against the best interests of the employees in the long run."

Mr. Pelley discussed the marked gains in efficiency which railroads have made as a result of improvement in their facilities. In the past thirteen years—1923 to 1935—Mr. Pelley said, nearly $8,000,000,000 have been expended for new and better improved equipment, heavier rail, strengthened bridges, and better roadbed to enable the railroads to meet the needs of modern industry adequately, safely and economically. Had it not been for this program of rehabilitation and modernization adopted by the railroads in 1923, he said, the rail carriers would not have been able to handle the increasing volume of traffic that reached its peak in 1929.

Mr. Pelley also said that the average freight revenue per ton per mile in 1921 was 1.275 cents compared with 0.978 cents in 1934, a reduction of 23.3 per cent. Large expenditures, Mr. Pelley said, have been made for improvement in passenger service, for improved equipment and tracks and for signaling, with the result that in 1935 not a passenger was killed in a collision or derailment of a train, although one was killed by the explosion of a heater in a passenger car of a train standing at a station.

Referring to statements made by a representative of the railway labor unions that much money paid by railroads to stockholders should have been devoted to reducing the funded debt, Mr. Pelley said: "The stockholder today is in the forgotten man class. When you consider that the railroads have nearly one million stockholders in this country, excluding insurance companies, savings banks, etc., this becomes a very human problem. In 1916, Class I railroads paid $306,106,937 in dividends. The property investment of the same railroads at that time was $17,637,000,000. In 1935, $126,508,314 was paid to stockholders, a decrease of $179,668,623, or 59 per cent. The property investment in 1935 was $25,775,000,000. Here we have an increase of $8,138,000,-

000 in the property investment, or 46 per cent, with a decrease of 59 per cent in dividends.

"The average earnings per hour of railroad employees in 1916 were 28.3 cents and in 1935, 68.6 cents, an increase of 142 per cent. In other words, in 1935 dividends to stockholders were less than half the dividends of 1916, while the average hourly earnings of employees were nearly two and one half times greater. It is a fact that the average hourly earnings of employees today are at the peak of all time, not even excepting the war period."

Ralph Budd, president of the Chicago, Burlington & Quincy, opposed enactment of the Wheeler-Crosser bill on the ground that it would severely handicap the railroads in furnishing service to the public, reduce efficiency and increase the cost of operation. "The effect of this bill," Mr. Budd told the committee, "would be to prevent reduction in railway transportation costs and to force an increase in such costs, preventing economies being made and by requiring them to pay employees when their services are not needed. It would also handicap management in providing the best of service to the public. It would prevent prompt and desirable variation in service even such as is seasonable. An extra car or cars, or an extra section of a train could presumably be added, but once added could not be discontinued, without formal hearings and arguments. These would consume a great deal of time and be so uncertain as to their duration that the practical effect would be, that enlarged or improved service would be withheld lest once having been tried, it could not be discontinued.

"The bill would also prevent abandonment or consolidation of lines of railway even though they are not self-supporting if such action would eliminate competition either with other railways or with other types of competitors.

"From the standpoint of maximum employment it certainly is not best for the workers to force costs up so high that charges are held at a level that tends to restrict the volume of traffic. The pending bill, if enacted into law, would prevent seasonal fluctuations of employment and fix the number of employees at the maximum required at the busiest time of the year. It also would prevent a carrier from abandoning and dismantling facilities no longer needed.

"So long as the present policy for obtaining railway transportation prevails, it is clearly in the public interest for railway officials and employees to exert every effort toward improving railway service and keeping the expenses down. It is likewise in the public interest for everyone else, whether shippers or not, to assist the railway managements to accomplish these ends. Likewise, it is against the public interest for anyone to do anything that will add, unnecessarily to the cost of producing transportation. Even though some persons are not shippers, the public is concerned with railroad freight and passenger charges because those charges enter into the cost of living of everyone.

"Railroad management and public regulatory bodies would assume a very grave responsibility in deciding that a railway plant of substantially less capacity than that of 1929 will suffice in future for the requirements of the shipping public. This is particularly true of the western railways because much of the railway traffic in the West is so highly seasonal.

"Instead of stopping railway development and improvement, the real interest of railway employees is best served by advancing it as rapidly as possible. There should be more freedom to exercise the initiative and ingenuity that is displayed in ordinary business enterprise. The railway plant must be shrunk to fit the smaller business to be done by railways, if that which has been lost can not be retrieved. Duplication should be avoided and rates and charges should be further reduced as soon as costs can be brought down. In order to accomplish these things the railways should be encouraged and assisted, not hampered and prohibited. More employment can be provided and with better working conditions if railway operation is permitted to go on a basis of sound business methods and procedure and to adjust its physical plant to the changing times. The employment of money and men in making these improvements will come, if permitted, through these normal channels and the low cost transportation will enable lower rates, which in turn will increase the volume of traffic and the number of employees required for its movement.

"My sympathies are primarily with railway employees because I come directly in contact with them and know many of their problems, but in fairness I am obligated to recognize the fact that other people have problems too; that we in the railroad business have cast our lot with an industry which is a servant or agency of creative industries and occupations; that we can succeed and prosper only as they do, and finally that we cannot expect others, who produce the traffic that we may handle, to set up and maintain for us a higher standard of compensation and greater security of employment than are practicable for all, out of the fruits of the labor of all."

J. L. Lancaster, president of the Texas & Pacific, spoke particularly from the standpoint of the railroads operating in the southwest, a section of the country, he said, which is far from complete development and where conditions in the way of new enterprises are constantly changing, with especial reference to the oil fields. "We have been called upon frequently to provide transportation facilities with the striking of new oil wells," declared the witness. "We have laid miles upon miles of track, set up terminals and yards, furnished loading and other facilities to take care of the first flush, and then when we have enabled them to move their product and have gone to considerable expense in assisting in their development, pipe lines have been constructed and the railroad facilities virtually abandoned. This has happened over a period of a very few years in several sections, and if this proposed law had been in effect we would have had to receive permission from the Interstate Commerce Commission or some other regulatory body to recover some of this equipment and use it elsewhere or else allow it to stand idle and rust or rot. We could not have dismantled any of these facilities of our own volition under this bill. We would have had to provide employment for the men who might be affected through this change, a condition over which we had no control, or paid them for their unemployment. And we could not have done that for any length of time and kept ahead of the sheriff."

The labor organizations in their negotiations with the railroads have demanded that employees laid off, having three or more years' employment status, be allowed two-thirds wages for a maximum unemployment period of ten years and that those with less than three years' employment status be allowed two-thirds wages for a maximum unemployment period of five years or a lump sum of one full year's allowance. The railroad committee had offered an allowance of one-half wages for those with five or more years of accumulative service for a maximum period of three years or a lump sum equivalent to one-half of the compensation for the twelve months period immediately preceding. It had also offered moving expenses and property loss, not to exceed $1,000. The various proposals were discussed at a meeting of the directors of the Association of American Railroads at Washington on March 27.

NEWS

Eastern Storedoor Tariffs Suspended by Commission

Action by 7 to 3 vote follows oral arguments on protests filed principally by truckers

The theory that the Interstate Commerce Commission is "railroad-minded," which has been rather assiduously circulated in recent years by opponents of commission regulation of railroad competitors, was somewhat exploded on March 31 when the commission voted, 7 to 3, to suspend for seven months pending an investigation the tariffs which had been filed by eastern railroads generally providing for free storedoor pick-up and delivery service on l.c.l. freight, to become effective on April 1. The plan had been in effect for some time on several of the eastern railroads and the commission had voted not to suspend similar tariffs which were put into effect recently by the western and southern lines. The tariffs now suspended would have made the plan practically universal throughout the United States and the eastern roads which already had it in effect, the Erie, Grand Trunk and Pennsylvania, had amended their plan to remove the provision limiting it to traffic on which the rail haul amounted to 260 miles.

The suspension was voted after the commission had devoted several hours the day before to oral argument on protests filed by the American Trucking Associations, Inc., the Merchant Truckmen's Bureau of New York, and other organizations mainly representing truckers, who contended that the plan of the railroads would take business away from local truckers that had not been in competition with the railroads but who were entitled to protection under the motor carrier act, and that it represented an effort on the part of the railroads to meet truck competition by performing service at a loss.

It was pointed out that the railroads were making contracts for performing the pick-up and delivery service with new organizations of truckers other than those who had been performing the service for shippers and that this would have a ruinous effect on the existing local truckers. Some of the protestants also contended that the allowance of 5 cents a hundred pounds proposed by the railroads for shippers and consignees who elect to furnish the pick-up and delivery service for themselves would amount to a rebate, but it was also argued by others that the allowance was so small that few shippers would employ local truckers to perform the service for them.

One of the reasons for suspending the tariffs which appealed to the commission was undoubtedly that implied in questions asked by Commissioner Eastman during the argument. He suggested that the railroads would not be hurt if the plan were held up for a while pending a study by the commission of the results attained during the past year by the roads that have had the plan in effect. Mr. Eastman had also criticized the plan on the ground that the railroads are offering an additional service free without first taking steps to reduce the cost of handling merchandise traffic.

By counsel for the trucking interests it was stated that the pick-up and delivery service costs the railroads from 10 to 18 cents per hundred pounds at each end and that this is more than the roads receive for hauls up to 125 miles. J. F. Eshelman, assistant general counsel of the Pennsylvania, who, with M. B. Pierce, assistant general counsel of the Erie, represented the eastern lines generally, said, however, that the average cost was 8.2 cents per hundred pounds and that the average haul had been from 250 to 350 miles. He took the position that the commission should not suspend the tariffs in the absence of a clear showing of illegality, saying that after the service had been adopted as an experiment the roads that have had experience with it have become convinced that it is a necessity and that it has increased their net earnings while leading to some economies in the handling of merchandise traffic.

Commissioners Aitchison, McManamy, and Mahaffie voted against suspension of the tariffs.

Progress In Grade Crossing Program

Plans for grade crossing projects to the amount of $89,952,000 had been approved by the Bureau of Public Roads up to March 28 under the government's $200,000,000 program, and contracts had been awarded to the amount of $52,255,194, including $3,838,068 during the week.

Ask Delay in Time Change for Chicago

The corporation counsel of Chicago has asked the Interstate Commerce Commission to delay its decision on the extension of the eastern time zone to include Chicago until after November, since there is now a move for a referendum on the time change ordinance in the November 3 election. The request accompanied the brief which the city filed with the commission, supporting its petition asking that the railroads entering Chicago be placed on eastern standard time.

President Praises Railway Safety Record for 1935

Correspondence with J. J. Pelley on last year's showing is made public

J. J. Pelley, president of the Association of American Railroads, has made public a letter from President Roosevelt congratulating railroads of the United States on their safety record in 1935.

"The railroads, as well as the country," President Roosevelt said, "are to be congratulated because of the record of safety discussed in your letter of March thirteenth. Such successes of the railroad men and management in the field of safety of operation have occurred before and so frequently that the country now has come to expect them, however difficult. They show great capacity for intelligent and sustained effort. The industry now faces, and I assume will always face, new problems arising from the necessity of continually adapting its facilities to meet the rapidly changing transportation needs of the country. This is a challenge which I am confident will be met with the same capacity which has served to make the splendid record just achieved."

The letter from the President was in response to one from Mr. Pelley in which he pointed out that:

"During the calendar year 1935, according to a check of the final figures of the Interstate Commerce Commission, on all the railroads of the United States only one passenger lost his life in a train accident. This regrettable fatality, resulting from the explosion of a steam heater in a passenger car standing in a station, occurred on November 6, 1935. Prior to that time, there had been no passenger fatality in a train accident on American railroads for a period of more than twelve months.

"During 1935, 445,994,621 passengers rode on the railroads of the United States without loss of the life of a single passenger through collision or derailment of a train. This record was accomplished during a period when the volume of business and the speed of trains were being increased.

"The record for 1935 is the result of years of steady, persistent and cooperative effort and improvement. Of 142 Class I railroads in the United States, 130 have a clear record of no passenger fatalities in train accidents for the past five years or more; 114 have such a record for ten years or more; 99 for fifteen years or more."

Full Government Control of the C.N.R. Proposed

Liberals would supplant trustees with board appointed by governor-in-council

Full and immediate control by the Dominion government of the affairs of the Canadian National through the substitution of a board of seven directors for the present board of trustees is the principal aim and provision of a bill introduced in the House at Ottawa by Hon. C. D. Howe, Minister of Railways and Marine, while a little earlier in the proceedings Hon. Charles Dunning, Minister of Finance, submitted further supplementary estimates for the C. N. R. which contain in their aggregate of $51,167,229 a sum of $47,421,464 to meet the net income deficit of the system as a result of its 1935 operations. Of this total, $41,795,757 is for the Canadian National System excluding Eastern lines, $5,265,373.20 for Eastern lines and $360,334.36 for the Prince Edward Island car ferry and terminals.

"The purpose of this bill," said Mr. Howe in m ving his measure to amend the Canadian National-Canadian Pacific Act, 1933, "is to terminate the present form of administration of the Canadian National, provided under authority of the 1933 legislation, and to substitute therefor administration by a board of directors to be appointed by the governor-in-council. This is the measure foreshadowed in the Speech from the Throne when intimation was given that legislation respecting the Canadian National which would serve to confer a greater measure of governmental authority and responsibility to Parliament would be sought." There was lively Liberal applause for his motion.

"The objects generally of the amendments contained in this bill," says the first explanatory note contained in the measure, "are to substitute a board of directors, consisting of seven members in place of three trustees; to provide that one of the directors shall be chairman of the board of directors and devote his whole time to the performance of his duties; to provide for the appointment by the directors of a president; to require the approval of the governor-in-council where, by law, the approval of the shareholders of a company is required, instead of dispensing with any such approval by either the governor-in-council or shareholders as was done in the case of the trustees; and to provide that a majority of the directors shall decide all matters instead of requiring a unanimous vote or a majority which included the chairman, as was provided for in the case of the trustees."

It is provided in the bill that the pension rights of any officer or employee of the Canadian National who may be appointed a director and chairman of the board of directors will be preserved. The directors are to be paid such sums as may be fixed by the governor-in-council, and if any director is in receipt of a pension he shall not be entitled to receive or be paid such pensions during his term of office. Each director shall receive only one remuneration, and the chairman of the board of directors shall be paid a salary to be fixed by the governor-in-council.

Of the seven directors three, including the chairman, shall be appointed for terms of three years each from appointment; two shall be appointed for terms of two years each from appointment; and two shall be appointed for terms of one year each from appointment. Four directors shall constitute a quorum. The president of the railway may also be the chairman of the board of directors. The annual budget and estimates of amounts required for income deficits and other obligations shall be under the control of the board of directors.

In this bill also appears the designation of a new cabinet portfolio to be created by legislation later in the session, namely that of Minister of Transport, the name by which the post of Minister of Railways and Marine is to be known.

One Commentator's View of the Reduced Fare Case

The Eastern railroads are pretty indignant about the I.C.C. order to reduce passenger fares. They do not wish their trains to be overrun with the two-cent class of people.

—Howard Brubaker in the New Yorker.

North Western Advertises Livestock Service

The Chicago & North Western has instituted a newspaper advertising campaign designed to increase the rail movement of livestock from farms to markets. The advertisements feature the freight rates on livestock from the city in which the advertisement appears to the leading markets, and point out the advantages of shipping by rail.

Car Loading Increase Expected

Freight car loadings in the second quarter of 1936 are expected to be about 9.5 per cent above actual loadings in the same quarter in 1935, according to estimates compiled by the thirteen Shippers' Regional Advisory Boards. On the basis of these estimates, loadings of the 29 principal commodities will be 4,984,325 cars in the second quarter of 1936, compared with 4,551,737 actual loadings for the same commodities in the corresponding period in 1935. All of the thirteen boards estimate an increase in the second quarter of 1936 compared with the same period in 1935.

Grade Crossing Accidents Increase

The Safety Section, A.A.R., reports that the number of persons killed in accidents in highway railroad grade crossings in the year 1935 was 1,680, as compared with 1,554 in the preceding year; and for two years before that the totals were still lower. It is pointed out, however, that in a longer view there has been an improvement in the situation, as, up to 1930, there had been never less than 2,000 fatalities each year for eight years; and, in 1928, the total was 2,567.

The number injured in 1935 was 4,658, an increase of 358 over 1934.

Proposed Wharfinger Bill Postponed by Eastman

Says nothing would be gained by pressing issue of regulation at this session

Joseph B. Eastman, federal co-ordinator of transportation, has issued a statement saying that in the circumstances nothing would be gained by attempting to press the issue of wharfinger regulation at this session of Congress.

In the co-ordinator's fourth report on transportation legislation, one of the recommendations was for federal regulation of "wharfingers", that being the name given, for convenience, to the operators of port terminal facilities, such as wharves, docks and warehouses, used in or in connection with transportation by water. It was stated among other things, that owing to the intense competition between the ports, between railroads, between steamship companies, and between the wharfingers themselves, charges for various wharfinger services are often inadequate and sometimes are not made at all, and that they are frequently used as a means, equivalent to the old railroad "rebates," of attracting traffic, with consequent widespread inconsistencies and discriminations. In addition to the injustice which results to various users of these facilities, the situation was described as often burdensome to the railroads and their owners and users, where the railroads act as wharfingers; to taxpayers, where the port terminal facilities are publicly owned or operated; and to the independent wharfingers who undertake to carry on the business as a private enterprise.

It was stated in the report that the only effective means of correcting these conditions is federal regulation, and that such regulation is in reality a logical and essential part of federal regulation of water carriage in general. It was also stated that a bill for such wharfinger regulation was being prepared after numerous conferences with interested parties, the intent being to meet all serious objections which could be met without sacrifice of principle. Upon completion of that bill, copies were submitted to many wharfingers on the Atlantic, Gulf and Pacific coasts and the Great Lakes, and to other interested parties.

"It has developed, however," Mr. Eastman said, "that important differences of opinion continue to exist, even among the ma ty who favor federal regulation at this time, in regard to the specific provisions which should be included in the bill, and that there are various complicating factors, both legal and practical, involving controversial issues of fact. It is evident that the proper consideration of such legislation by Congress would require much time, and insufficient time appears to be available at the present session. It is also quite generally agreed that legislation for the regulation of wharfingers should be contingent upon legislation for the adequate regulation of water carriers, and it still remains for Congress to act upon the latter legislation. In the circumstances, the co-ordinator is of the opinion that nothing would be gained by attempting to press the issue of wharfinger regulation at the present session."

C. N. J. Granted Permission to Abandon Bus Line

The Board of Public Utility Commissioners of New Jersey, upon further hearing, has granted the petition of the Central of New Jersey for authority to abandon bus services which have been operated since May, 1929, in substitution for train services between Hammonton, N. J., and Bridgeton, via Winslow Junction. In granting the petition the board pointed out that the bus service had been operated in 1935 at a loss of $11,042. Gross bus revenue last year was $1,624 and New York-Atlantic City railway revenue collected from bus passengers was $3,508, while operating expenses of the bus line totaled $12,666.

Two Hundred Thousandth Passenger on Hiawatha

The two hundred thousandth passenger to travel on the Hiawatha of the Chicago, Milwaukee, St. Paul & Pacific, Mrs. William S. Anderson, of Minneapols, Minn., boarded the train at Chicago on March 31. After a surprise reception she was presented with a traveling case and accessories as an expression of appreciation of the reception accorded the new train during the 10 months it has been in operation; and she became the honored guest enroute. To determine the two hundred thousandth passenger, telephone communication was maintained with Minneapolis, where the eastbound Hiawatha started 30 minutes prior to the companion train from Chicago.

United Drug Exhibit Train

The United Drug Company is now sponsoring a "convention on wheels," consisting of a 12-car train which left Boston, Mass., on March 26 for a 25,000-mile tour of the United States and southern Canada with scheduled stops at 146 points. The train is painted "in Rexall colors of royal blue and white" and provides an exhibit of United Drug products for the public and for the "10,000 druggists and 40,000 salesmen and saleswomen of the 10,000 Rexall drug stores in this country and the Dominion." The equipment of the train includes, in addition to the exhibit cars, lounge cars and dining cars. An orchestra is being carried to provide each local "convention" with a program of dining and dancing.

New Equipment

New freight cars on order by the Class I railroads on March 1 totaled 12,679, according to reports received by the Association of American Railroads. New freight cars on order on March 1, 1925 totaled 514, while on the same day in 1934 there were 5,019. New steam locomotives on order on March 1 this year totaled 37 compared with 5 on March 1, 1935. New steam locomotives on order on March 1, 1934, totaled 21. New electric locomotives on order on March 1 this year totaled 18 compared with 70 on the same day last year, and 90 on the same day in 1934.

New freight cars installed in service in the first two months this year totaled 1,925 compared with 428 in the first two months of 1935, and 23 in the first two months of 1934. One new steam locomotive was installed in the first two months this year compared with seven in the same period last year, but none in the same period in 1934. One new electric locomotive was placed in service in the first two months of 1936 compared with 20 last year and four two years ago. Freight cars and locomotives leased or otherwise acquired are not included in the above figures.

Wages and Working Conditions in Air Transportation

Co-ordinator Eastman on March 31 made public a voluminous report on "Hours, Wages, and Working Conditions In Scheduled Air Transportation," prepared under the direction of Charles S. Morgan, director of his Section of Research, and Otto S. Beyer, director of his Section of Labor Relations, with the collaboration of the Bureau of Labor Statistics. This report is one of a series to be issued regarding labor conditions in the various branches of transportation, undertaken in part because of the claim made by the railroads that they are handicapped in competition because of differences in labor standards and relations as compared with the other forms of transportation. Comparisons will appear later in a summary report.

Corning Telescope Mirror Going to California

The 20-ton glass disk, which has been under construction for the past two years, at the Corning Glass Works, Corning, N. Y., for the observatory on Mount Palomar, is now ready to be polished and, loaded on its special car, was scheduled to start for California by the New York Central, on Thursday morning, March 26. The route is over the New York Central (to St. Louis), the Burlington and the Santa Fe, to Pasadena, Cal., where specialists of the California Institute of Technology will spend from three to five years in finishing this enormous "eye."

This disk is 200 inches in diameter and 26 in. thick. It is carried in a steel crate made of thick boiler plate, the crate alone weighing 10 tons. The faces of the disk are protected by layers of cork 3 in. thick.

Eastern Roads to Ask Time to Experiment With Passenger Fares

A meeting of practically all of the passenger-carrying lines in the eastern territory was held in the offices of the Association of American Railroads at Washington on March 27, for consideration of the recent order of the Interstate Commerce Commission prescribing maximum passenger fares effective on June 2, after which it was announced as the conclusion of a large majority of the lines represented that application should be made to the commission requesting a deferment of the effective date of the order. In the meantime it was proposed that "certain experimental bases of fare" be established during the interim period but no announcement was made as to what bases were proposed.

On the following day Daniel Willard, president of the Baltimore & Ohio, announced that so far as the Baltimore & Ohio is concerned it will not interfere with what the other railroads decide to do in this respect but that "it is now preparing tariffs on the basis of the fares ordered by the commission and expects to put them into effect not later than June 2, the date specified by the commission."

Labor's Government Ownership Headquarters Moved to St. Louis

Finding comparatively little interest in Washington in the subject of government ownership of railroads, the Railway Labor Executives' Association has moved its government ownership publicity headquarters from Washington to St. Louis. The announcement followed a statement by Chairman Wheeler of the Senate committee on interstate commerce that it was not intended to bring up at this session of Congress the Senator's government ownership bill. The labor organizations' office was established at Washington, in a building near the Capitol, several months ago and several circular letters have been issued to members of Congress, but the principal publicity effect has been to stimulate publicity in opposition to government ownership. It is understood that the railroad labor organizations are now planning to concentrate their efforts on the Wheeler-Crosser bill, to take the place of the labor restrictions in the emergency transportation act, which expires on June 16, which would require a railroad to obtain Interstate Commerce Commission approval before making any reduction in service or facilities.

Port of New York Authority

The annual report of the Port of New York Authority for the year ended December 31, 1935, reveals that the Port Authority Commerce building, which houses Manhattan's Union Inland Freight Station, operated last year at a loss of $336,362. The report states that comparison with the previous year is not possible, as the operating period commenced on March 1, 1934.

Gross 1935 revenues from operation of the building totaled $854,144 but operating expenses, interest and other charges were $1,190,506. The combined income account for all Port Authority operations shows that last year's net income was $3,346,143 as compared with $2,854,905 in 1934, an increase of 17.2 per cent. Net incomes were reported by the Holland Tunnel and the George Washington Bridge, while deficits, in addition to that of the Commerce building, were reported by the Arthur Kill Bridges and the Bayonne Bridge.

National Rivers and Harbors Congress

The annual convention of the National Rivers and Harbors Congress will be held in Washington on April 27 and 28. Resolutions on flood control and waterways will be offered for presentation to the resolutions committees of the Republican and Democratic national conventions for incorporation in the platforms of the two parties. The Rivers and Harbors Congress was successful in having waterway and flood control planks included in the platforms of both parties in 1932.

The projects committee of the congress, headed by Representative W. J. Driver of Arkansas as chairman and composed of a waterway leader from each of the ten en-

gineering divisions of the United States, will meet in advance of the convention on April 24 and 25 for consideration of individual projects. The projects recommended by the committee and endorsed by the Congress will be urged for inclusion in the government's public works program.

Railroads and the New Tax Bill

Important changes in the methods of federal taxation of railroad net income are proposed in a report of a sub-committee of the House ways and means committee made public on March 27 for the purpose of public hearings being conducted by the committee this week on the government's proposed new tax bill to impose a tax on the net income of corporations not distributed as dividends, in place of the present corporation taxes, and to impose a tax on the dividends received by the stockholders. The plan proposes a graduated tax on corporations ranging from 1 to 42½ per cent, graduated according to the percentage of their net income which is undistributed, and the committee recommended that the privilege of filing consolidated returns be continued as to the railroads, with the right to make a new election whether or not to file a consolidated return for the first taxable year under the new law.

Club Meetings

The Northwest Car Men's Association will hold its next meeting on Monday evening, April 6, at Midway Club Rooms, 1957 University Avenue, St. Paul (Minn.). C. F. Vandervoort, Minnesota Transfer, will speak on inspection and interchange of freight cars.

The Southern and Southwestern Railway Club has no meeting scheduled for April. The date for the May meeting is Thursday, the 21st, at 10 a.m., and the place is the Ansley Hotel, Atlanta. Frank M. Robbins, of the Ross-Meehan Foundries, Chattanooga, will present a paper on malleable and steel castings.

E. Adamson, commercial counsel, was the speaker at a meeting of the Metropolitan Traffic Association of New York, held on March 26 at the Midston House in that city. Mr. Adamson spoke on "Facts on the Transportation Situation in Newfoundland and Labrador."

N. I. T. L. Opposes Continuation of Emergency Freight Charges

The National Industrial Traffic League, at a special meeting in Washington on March 31, went on record in opposition to any continuation of the temporary emergency increases in freight rates authorized by the Interstate Commerce Commission in Ex Parte No. 115, which under the present authorization expire on June 30. The railroads have asked that the so-called "surcharges" be continued indefinitely, but league members took the position that the higher charges are hurting the roads by encouraging truck competition. The league also reaffirmed its previous position opposing the extension of the term of office of Co-ordinator Eastman and opposing additional regulation of water transportation, and expressed its opposition to the Wheeler-Crosser bill now under consideration in Congress. Members of the Interstate Commerce Commission and several railroad officers were the guests of the league at a luncheon meeting at which Commissioner B. H. Meyer spoke on "Certain Aspects of Transportation Today." The league expects to move its offices shortly from Chicago to Washington, where its headquarters will be under the direction of Edward F. Lacey, executive secretary.

Pacific Northwest Shippers' Board

Opposition to certain legislative bills was voiced by the Transportation committee of the Pacific Northwest Shippers' Advisory Board at its thirty-second meeting at Portland, Ore., on March 26. In its report, the committee said a study of the "make work" bills before Congress indicated that enactment of them would increase transportation costs $20 per car, based on the 1930 traffic level; and that none of them would tend to increase efficiency. Discontinuance of the office of the Federal Co-ordinator of Transportation when the term expires June 15, 1936, also was recommended. Other bills which were opposed include the limitation of freight trains to 70 cars and passenger trains to 14 cars, and government ownership of railways. The committee recommended the passage of the proposal to regulate interstate water carriers and certain intrastate water carriers. Endorsement was given the suggestion by railways to shippers that they increase loads by one ton a car to cut down the number of cars required.

Pennsylvania Courtesy Appreciated

Officers of the Pennsylvania say that letters of commendation and thanks, received from passengers since the serious delays and disturbances incident to the March floods, are to be numbered by the hundreds; and one passenger produced a 2,000-word account of his observations while detained in the flooded district. Commendations naming individual officers and employees were numerous. Passengers on a westbound express train, marooned at Huntingdon, Pa., adopted formal resolutions thanking the trainmen, the station agent and the railroad company for the careful attentions bestowed upon them. That the experiences of the delays proved most interesting was a very common expression.

Passengers from the West, arriving in New York by way of the New York Central, 24 hours late, testified that they had had "a thoroughly enjoyable time." The National Broadcasting Company, its engineers and other officers, were among those whose business was specially aided by the efforts of the railroad and its men. Out-of-the-ordinary efforts by the railroad forces figured prominently in getting newspapers to communities that were deprived of other means of outside information. In and around Pittsburgh, newspapers had to be carried by the freight-car-load.

I. C. C. Flooded with Motor Tariffs

Rates, fares and charges of bus and truck operators in interstate commerce have been technically subject to commission regulation since midnight of Tuesday this week, the deadline set by the Interstate Commerce Commission after several postponements for the filing of tariffs to become effective on April 1. The latest postponement was from March 23 to March 31 for the filing of tariffs, made necessary by the numerous river floods in eastern territory which delayed the mails, and as the waters subsided the flood of tariffs sent in to the commission's files was correspondingly increased. It was roughly estimated that some 50,000 tariffs had been received by March 23, but the volume was such that not even a count of the number was possible, and the commission ruled after the postponement that all should be withheld from public inspection until after March 31. Thousands of additional tariffs were received during the following week, but it will be some time before they can be made available for inspection.

There is a strong suspicion that a large proportion of the individual truck tariffs have been based rather closely on l.c.l. railroad rates, but a large number have been filed by some thirty or more tariff-publishing agents acting for groups of carriers, and many of the tariffs are to be used in connection with four major classifications adopted by groups of the industry. These are the National Motor Freight Classification, compiled by the American Trucking Associations, Inc.; the Co-ordinated Motor Freight Classification, published by the Massachusetts Rate Bureau; the Official Motor Freight Classification, published by the Connecticut Rate Bureau, and the Transcontinental Motor Freight Classification. The bus tariffs are understood to represent approximately the rates that have heretofore been in effect and published in various tariffs filed with state commissions.

The motor carrier act provides that the initially filed tariffs may not be suspended by the commission, although they are subject to complaint, but it is expected that a great deal of revision may occur, to be covered by supplements, as the various carriers learn of the rates filed by their competitors.

100 Years of German Railways

"One-hundred Years of German Railways" is the title of a special number of "Illustrirte Zeitung" (Leipzig, Germany, published by J. J. Weber), which has been issued in honor of the centenary indicated by its title. This is a handsome pamphlet of 78 pages, 10½ in. by 14 in., printed in English, and profusely illustrated.

Among the numerous historical sketches, the first one to attract attention is in the advertising pages, a one-page history of the well-known electrical firm of Siemens & Halske. Among its illustrations is the electric railroad car made by this concern, which, in the year 1902, attained a speed of 131 miles an hour.

Many of the illustrations scattered through the 78 pages are colored, and among them are full-page interior views; one of a dining car; and a double-page picture of the great Central station at Leipzig.

Introducing the text are brief notes by Dr. Dorpmuller, general director of the German railroads, and Eltz Rubenach, minister of traffic. Brief sketches covering the hundred years deal with general

railroad history; history of locomotive building; the railroads in the World War; social relations (employees); train operation; traffic and politics; building operations of the railroads and the state of bridge building.

The advertising pages afford an elaborate picture of German manufacturing interests connected with railroad operation, including a page devoted to the Leipzig Fair.

Routing Bill Considered by House Committee

A sub-committee of the House committee on interstate and foreign commerce held a hearing on March 31 on H.R. 5364, one of the bills recommended by Co-ordinator Eastman, which would authorize the Interstate Commerce Commission to require establishment of through routes and joint rates for freight regardless of the short-hauling of any carrier. The Senate committee on interstate commerce recently held a hearing on the similar bill introduced in the Senate.

The bill was opposed by representatives of the Association of American Railroads but was supported by C. A. Miller, general counsel of the American Short Line Railroad Association, who had also appeared before the Senate committee. He said that if the provision protecting the routing of the short lines contained in the emergency transportation act expires on June 16, without the new proposed legislation there would be a great acceleration of abandonment of short lines because the trunk lines would eliminate them from through routes. "Our particular interest in this bill relates to the provisions which will give to the Interstate Commerce Commission the power to establish through routes when found to be in the public interest and which also prevent the elimination of rates and routes now existing except with the consent of the carriers or the approval of the commission," he said.

State May Still Protect Highways, Texas Court Holds

The Federal Motor Carrier Act did not undertake either expressly or by necessary implication to deny to a state the power to limit or even prohibit operations on its highways, if such prohibition be reasonably necessary to preserve such highways, or to protect the safety of the public, according to a decision recently entered by the Court of Civil Appeals at Austin, Texas.

In considering applicable Texas laws the court held that prior to the enactment of the federal motor carrier act the duty was imposed upon the Texas railroad commission before acting upon an application to determine three questions: First, whether such commerce is needed to serve the public convenience; second, whether the structure and preservation of the highways will permit such use; third, whether, admitting both of these, the safety of the public will authorize such use. The court held that as to the first of these questions the state commission had jurisdiction only as to intrastate commerce, and not as to interstate commerce, but that as to the second and third questions the commission had jurisdiction both as to interstate and intrastate operations so far as they affect the highways within the state.

In considering the question as to whether or not the federal motor carrier act completely occupied the field of interstate commerce by motor carriers over the highways, to the entire exclusion of all state regulation or control thereof, the court held that it was not necessary to consider the question of whether Congress has power to deny to the state the right to protect and preserve its own property, or to protect the lives and property of its citizens in the use of such highways, but that a careful consideration of the act led to the conclusion that there had been no attempt to do so.

The Canadian Roads in February

The Canadian Pacific in February earned net operating revenue of $867,397, as compared with $850,144 for February, 1935, an increase of $17,252. Gross for the month, $9,280,593, showed an increase of $624,574, while operating expenses, $8,413,196, showed an increase of $607,321.

For the first two months of this year, operating net totaled $1,479,969, which contrasts with $1,054,458 with the net for the corresponding two-month period of last year, an increase of $425,511. Gross for the two months at $18,604,415 showed an increase of $1,681,752, while operating expenses at $17,124,445 showed an increase of $1,256,241.

An increase of $644,701 in operating revenues for February, as compared with 1935, is shown in the monthly statement of the Canadian National Railways, all-inclusive system. Operating revenues were $13,066,507, as compared with $12,421,805 for the corresponding month of last year. Operating expenses, which in February, 1935, were $12,289,238, showed an increase last month of $1,065,728. The statement shows a net operating deficit of $288,460 for the month, compared with a net revenue of $132,567 for February of last year, a decrease of $421,027.

For the two months there was an increase in operating revenues of $1,279,668, but an increase in operating expenses of $1,530,673. During this period there was a net operating deficit of $864,790, compared with a deficit of $613,786 for January and February of last year, resulting in a deficit increase of $251,005.

Meetings & Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 3400 Empire State Bldg., New York, N. Y.

ALLIED RAILWAY SUPPLY ASSOCIATION.—F. W. Venton, Crane Company, 836 S. Michigan Ave., Chicago, Ill. To meet with Air Brake Association, Car Department Officers' Association, International Railroad Master Blacksmith's Association, International Railway Fuel Association, International Railway General Foremen's Association, Master Boiler Makers' Association and the Traveling Engineers' Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 816 McCormick Bldg., Chicago, Ill. Annual meeting, October 27-29, 1936, New Orleans, La.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, June 16-18, 1936, Hotel Stevens, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill. Annual meeting, October 5-8, 1936, Toronto, Ontario.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill. Annual meeting, October 20-22, 1936, Hotel Stevens, Chicago, Ill. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—R. G. Buford, Asst. Mgr., Industrial Development Dept., M-K-T R. R., Dallas, Tex.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the Association of American Railroads, Division IV.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. Fenaja, Missouri Pacific Lines Magazine, Missouri Pacific Lines Bldg., St. Louis, Mo.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M. St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York, N. Y.

Railroad Division.—Marion B. Richardson, 192 E. Cedar St., Livingston, N. J.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, 1937, New Orleans, La.

ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington, D. C.

Operations and Maintenance Department.—J. M. Symes, Vice-President, Transportation Bldg., Washington, D. C.

Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting, May 11-12, 1936, Hotel Stevens, Chicago, Ill.

Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting, May 20-21, 1936, Hotel Statler, St. Louis, Mo.

Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y. Next meeting, June 23-25, 1936, Hotel Stevens, Chicago, Ill.

Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York, N. Y. Next meeting, October 6-8, 1936, Mayflower Hotel, Washington, D. C.

Division II.—Transportation.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Division IV.—Engineering.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill.

Construction and Maintenance Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill.

Electrical Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y.

Division V.—Mechanical.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.

Division VI.—Purchases and Stores.—W. J. Farrell, 30 Vesey St., New York, N. Y.

Division VII.—Freight Claims.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, June 2-4, 1936, Chicago, Ill.

Division VIII.—Motor Transport.—George M. Campbell, Transportation Bldg., Washington, D. C.

Car-Service Division.—C. A. Buch, Transportation Bldg., Washington, D. C.

Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Chief Clerk and Claim Agent, General Claims Dept., Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, June 17-19, 1936, Hotel St. Paul, St. Paul, Minn.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W. Ry., 1519 Daily News Bldg., 400 W. Madison St., Chicago, Ill.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 2271 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, 7926 S. Morgan St., Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, Room 299, 610 S. Main St., Los Angeles, Cal. Club not active at present.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—E. G. Bishop, Illinois Central System, East St. Louis, Ill. Regular meetings, third Tuesday of each month, except June, July and August, Hotel Statler, St. Louis, Mo.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 2920 Utopia Place, Hyde Park, Cincinnati, Ohio. Operation suspended indefinitely.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings temporarily suspended.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—T. D. Smith, 1660 Old Colony Bldg., Chicago, Ill.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha St. Winona, Minn.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y. Annual meeting, September 16-17, 1936, Hotel Sherman, Chicago, Ill.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, 810 18th St., N. W., Washington, D. C. Annual meeting, November 10-13, 1936, Atlantic City, N. J.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White. (Pres. and Sec'y.) Room 1826, 208 S. La Salle St., Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Copley-Plaza, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July and August, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco, and Oakland, excepting June at Los Angeles and October at Sacramento.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton (Treas. and Asst. Sec'y.), First National Bank Bldg., Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway 1941 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—P. A. Bissell, 40 Broad St., Boston, Mass. Annual meeting, October 13-14, 1936.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division, Purchases and Stores Division, and Motor Transport Division, Association of American Railroads.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R., Division I.

RAILWAY TIE ASSOCIATION.—I. C. Rowe, 2091 Railway Exchange Bldg., St. Louis, Mo. Annual meeting, May 20-22, 1936, Netherland Plaza Hotel, Cincinnati, Ohio.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—Merged with Association of American Railroads.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road. Baltimore & Ohio, Pittsburgh, Pa. Annual meeting, September 15-17, 1936, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOCIETY OF OFFICERS, UNITED ASSOCIATIONS OF RAILROAD VETERANS.—M. W. Jones, Baltimore & Ohio, Mt. Royal Station, Baltimore, Md. Annual meeting, October, 1936, Detroit, Mich.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & C. R. R., Atlanta, Ga.

TOOL FOREMEN SUPPLIERS' ASSOCIATION.—E. E. Caswell, Union Twist Drill Co., 11 S. Clinton St., Chicago, Ill. Meets with American Railway Tool Foremen's Association.

TORONTO RAILWAY CLUB.—R. H. Burgess, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—D. J. Higgins, Gardner-Denver Company, 332 S. Michigan Ave., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—D. Meadows (Treasurer), 58 Roseberry Place, St. Thomas, Ontario.

WESTERN RAILWAY CLUB.—C. L. Emerson, C. M. St. P. & P., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Construction

ATCHISON, TOPEKA & SANTA FE.—A contract has been awarded to Fairbanks, Morse & Company, Chicago, for the construction at Frontenac, Kan., of a reinforced concrete locomotive coaler in which the conveyor type elevating equipment will have a capacity of 60 tons per hour.

BOSTON & MAINE.—The New York Public Service Commission has approved a low bid of $48,958 submitted by S. A. Scullen, Inc., Cohoes, N. Y., for the elimination of the Pease crossing of this road in Hoosick, N. Y. The commission also approved a low bid of the Bethlehem Steel Company, Inc., Bethlehem, Pa., at $12,814 for furnishing and erecting the steel superstructure.

GOLD COAST.—The Interstate Commerce Commission has authorized this company to construct a line from the docks at Port Orford, Ore., to Leland, 90 miles. Total construction cost is estimated at $4,150,000, with equipment to cost $350,000 additional.

MISSOURI PACIFIC.—A contract for the grading and construction of culverts on 3.71 miles of line which this company is rebuilding between Spadra Junction and Knoxville Junction, Ark., has been awarded to the Winston Brothers Company, St. Louis, Mo.

READING.—A contract has been given to Young Brothers, Inc., Philadelphia, Pa., for grading, masonry and other appurtenant work, in connection with the construction of bridge No. 9-15 on the line of Levick street, east of Lawndale station, Cheltenham township, Pa.

WABASH.—United States District Judge Charles B. Davis has authorized the receivers for the Wabash to replace or repair nine bridges at various points in Illinois, Iowa and Missouri, at an aggregate cost of $138,158.

Supply Trade

F. C. Keene has been appointed sales representative of the **Illinois Railway Equipment Company,** with headquarters at Chicago.

The Noland Company, Inc., Washington, D. C., has been appointed Toncan Iron sheet distributors, for the **Republic Steel Corporation,** Cleveland, Ohio.

Alfred Kauffmann has been elected president of the **Link-Belt Company,** Chicago, succeeding **George P. Torrence,** who has resigned as president and director of the company.

J. R. C. Hintz, until recently railway sales division manager of the Detroit Graphite Company, has been appointed eastern sales representative of the **Acme White Lead & Color Works,** Detroit, Mich. Mr. Hintz's headquarters are at New York.

R. A. Griswold, for many years identified with the anti-friction bearing industry, who joined the sales organization of the **Bantam Ball Bearing Company,** South Bend, Ind., in October, 1935, has been assigned the Connecticut and Massachusetts territory, with headquarters at Hartford, Conn.

C. Russell Warren, formerly head of the Chicago branch of **L. C. Chase & Company, Inc.,** New York, and with this organization for the past 14 years, has been appointed sales manager for all **Goodall - Sanford** transportation and home-furnishings divisions, with headquarters at New York.

C. W. Dietrich, Jr., has been appointed sales engineer for the **Torrington Company,** Torrington, Conn., and the **Bantam Ball Bearing Company,** South Bend, Ind., to handle their bearings and specialties in the New York territory, with headquarters at 200 Fifth avenue, New York. Mr. Dietrich was graduated in mechanical engineering at Cornell University in 1918, and then served in engineering and sales capacities with the Automatic Refrigerating Company, the Hyatt Roller Bearing division of General Motors and the James T. Gordon Company.

G. M. Laughlin, Jr., chairman of the board of the **Jones & Laughlin Steel Corporation,** has announced his desire to tender his resignation as chairman of the board to take effect upon completion of current financing operations, and it is expected at that time that **H. E. Lewis,** chairman of the executive committee of the Jeffrey Manufacturing Company, Columbus, Ohio, and formerly executive vice-president of the Bethlehem Steel Corporation, will be elected a director and chairman of the board of the Jones & Laughlin Steel Corporation.

General American Transportation Corporation

The annual report of the General American Transportation Corporation and its subsidiaries for 1935 shows a net profit of

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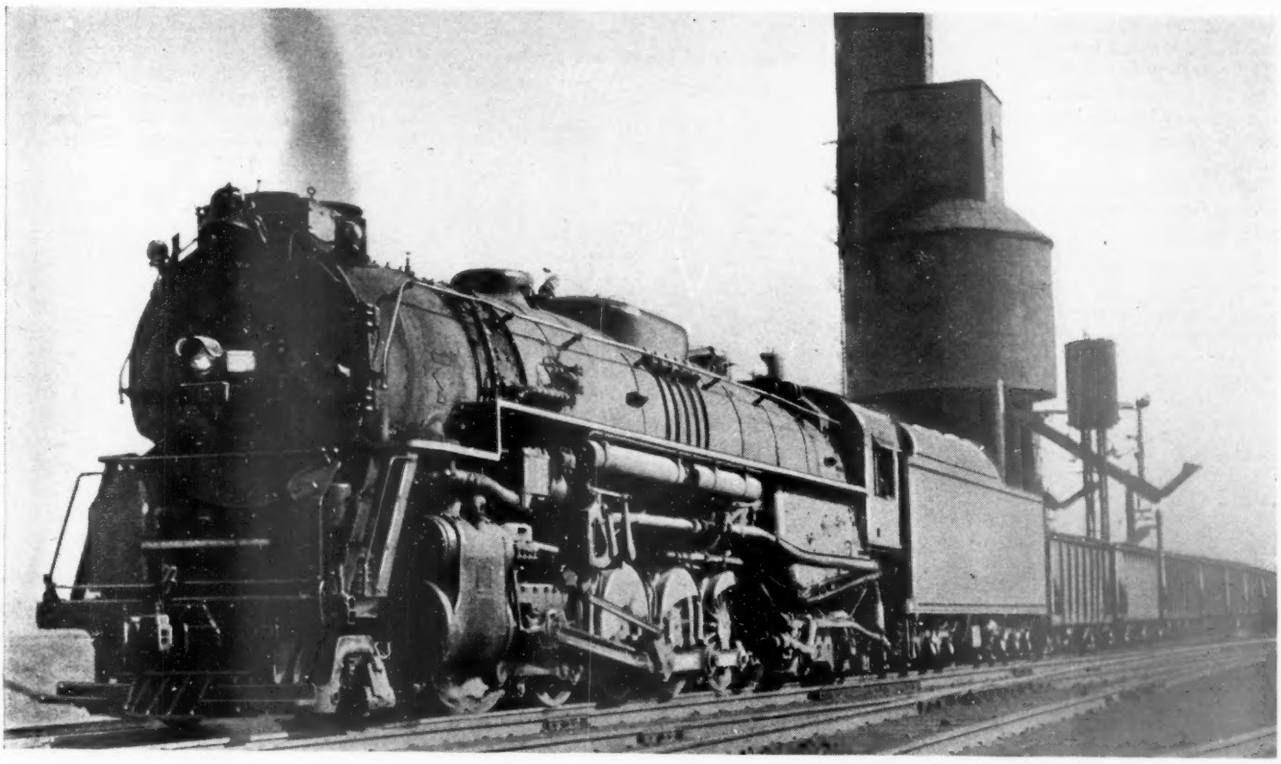
MODERN LOCOMOTIVES *are money makers!*



Power and speed are the two factors that determine locomotive gross earnings.

Maximum horsepower per axle plus high sustained capacity determine ton-mile costs.

Modern power is capable of doubling the net ton-miles per mile of track per day.

Modern Power spreads all operating costs over greater ton-mile output with corresponding operating economy.

LIMA LOCOMOTIVE WORKS INCORPORATED

LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO

$2,208,924, as compared with a net profit of $2,649,577 in 1934. The total this year was affected adversely by the falling off in demand for packing house refrigerator cars and stock cars. The severe drought and the action of the A.A.A. in curtailing the production of live stock, with the consequent high prices for all meat products, caused not only a shortage thereof, but a diminution in demand and consequently, the company's fleets of packing house refrigerator and stock cars were not employed to a normal extent.

The company has continued its policy of wholesaling transportation to railroads and large shippers by acquiring the fleets of the Texas Company and the Proctor & Gamble Company.

The consolidated summary of income and the consolidated surplus account are as follows:

	1935	1934
Gross income from sales, rentals, etc.	$27,342,081	$26,501,677
Cost of sales and expenses (exclusive of depreciation)	19,230,743	18,692,672
	$8,111,338	$7,809,005
Dividends, interest and other income	464,125	646,633
	$8,575,463	$8,455,638
Deductions from income:		
Depreciation	$4,501,750	$4,299,214
Amortization of debt discount and expense	146,675	.....
Interest paid	1,501,953	1,394,860
Federal income tax	95,643	.....
Dividends on preferred stock of subsidiaries	59,360	111,987
Other charges	61,158	.....
	$6,366,539	$5,806,061
Net profit	$2,208,924	$2,649,577
Capital:		
Balance, December 31, 1934	$36,288,815	
Additions to surplus:		
Excess of cash proceeds or value of assets acquired (measured by market value of shares issued) over par value of the $5 per share of stock issued	597,840	
Excess over cost of parent company stock disposed of by subsidiary	1,134	
	$36,887,789	
Earned:		
Balance, December 31, 1934	$13,612,226	
Additions to surplus:		
Net profit for year ended December 31, 1935	2,208,924	
Parent company interest in earnings since acquisition of subsidiary heretofore not consolidated, in excess of dividends received	$735,804	
	$16,556,954	
Charges to surplus:		
Dividends paid or provided for:		
On preferred stocks of subsidiaries (provided for in profit and loss statement)	.....	
Cash dividends on common stock	1,449,119	
Allocation to general reserves of interest in earnings since acquisition of subsidiary heretofore not consolidated in excess of dividends received	735,804	
Premiums paid on retirement of preferred stock of subsidiaries	114,329	
	$2,299,252	
Balance, December 31, 1935	$14,257,702	

Westinghouse Electric & Manufacturing Company Annual Report

The Westinghouse Electric & Manufacturing Company for the year ended December 31, 1935, reported a net income of $11,983,381, the highest it has reported in any year since 1929. Its 1934 net was $189,563.

The consolidated income and surplus accounts for the years 1934 and 1935 follow:

Consolidated Income and Surplus

Years Ended December 31, 1935 and 1934

	Year Ended December 31, 1935	Year Ended December 31, 1934
NET SALES	$122,588,556	$92,158,894
COST OF SALES: Manufacturing cost and distribution, administration, and general expenses—including taxes (except federal income), service annuities, operating reserves, and depreciation of buildings and equipment	111,714,041	93,426,328
PROFIT FROM SALES (1934, loss)	$10,874,515	$1,267,434
OTHER OPERATING PROFIT: Current operating results of subsidiary companies not consolidated in detail (1934, loss)	413,353	135,285
PROFIT FROM OPERATIONS (1934, loss)	$11,287,868	$1,402,719
INCOME CREDITS: Interest, discount, and miscellaneous income, net	$1,070,428	$681,095
Dividends and interest on investments	1,577,326	1,381,215
TOTAL	†$2,647,754	†$2,062,310
NET PROFIT before foreign exchange adjustments and federal income tax provision	$13,935,622	$659,591
Gain in foreign exchange values	$45,318	$7,717
Provision for federal income tax	1,997,559	477,745
TOTAL	$1,952,241	$470,028
NET INCOME for the year	$11,983,381	$189,563
SURPLUS at beginning of year	40,620,427	40,564,474
SURPLUS before adjustments and dividends	$52,603,808	$40,754,037
ADJUSTMENT CHARGES: Adjustment in value of securities (credit)	$598,953	$415,895
Adjustment on Radio Corporation of America stock distributed as a dividend	‡2,230,552	
Miscellaneous, net (1935, credit)	450,475	269,585
TOTAL (1934, credit)	$1,181,124	$146,310
SURPLUS before dividends	$51,422,684	$40,900,347
DIVIDENDS: On preferred capital stock	$247,740	$279,920
On common capital stock	5,969,080	
TOTAL	*$6,216,820	$279,920
SURPLUS at end of year, including $16,293,860.00 paid-in surplus representing premium on sale of additional common capital stock in 1929	$45,205,864	$40,620,427

Provision for plant and equipment depreciation for all companies for 1935 amounted to $4,946,251.04 compared with $5,210,848.47 for 1934.

† Includes in 1935 profit of $1,606,625.87 representing dividends received and profits realized from securities of Radio Corporation of America sold during the year, and in 1934 loss of $176,130.93 representing losses on securities of that corporation sold during that year.

‡ Difference between value as carried on books of this Company of Radio Corporation of America stock distributed as a dividend and market value at date of declaration of such dividend or $3.50 optional cash dividend per share on preferred stock.

* The 1935 dividend, in addition to the cash dividend aggregating $1.00 per share paid on common stock, represents market value at date of declaration of Radio Corporation of America common stock distributed as a dividend or $3.50 optional cash dividend per share on preferred stock.

The report, issued as the company celebrates its Golden Jubilee, is accompanied by a review and summary of the operations, the engineering achievements, and facts and figures of the fifty years from 1886, when the company was incorporated, to the close of 1935.

Sales billed totaled $122,588,556 compared with $92,158,894 in 1934, an increase of 33 per cent. Orders received amounted to $123,629,333 compared with $106,473,226 in 1934, an increase of 16 per cent.

Of the 1935 net income, $1,606,625 was a non-recurring item, representing dividends received and profits realized from securities of the Radio Corporation of America sold in compliance with Federal Court decree of 1932. The company now owns no securities of the Radio Corporation.

On December 31, current assets amounted to $103,375,383 and current liabilities to $9,511,619, a net working capital of $93,863,764, and a ratio of current assets to current liabilities of 10.9 to 1. This compares with a working capital of $74,206,532 at the close of 1934. The company has no bank loans or bonded indebtedness outstanding.

OBITUARY

Arthur G. Johnson, president of the Armspear Manufacturing Company, New York, died on March 21. Mr. Johnson was in his fifty-second year and had been connected with this company for 15 years.

Charles S. Lockwood, who worked with John W. Hyatt on the invention of the Hyatt roller bearing, died in Newark, N. J., on March 20, in his eighty-sixth year. Mr. Lockwood was an active member of the Hyatt experimental laboratory staff almost up to the time of his death, his career having covered 62 years in the service. More than 44 of these years were devoted to the Hyatt Roller Bearing Company, since its incorporation in 1892. Mr. Lockwood himself took out nearly 100 patents.

William W. Watkins, president of the Joyce-Watkins Company, Chicago, died in Memphis, Tenn., on March 26 of pneumonia. He was born on July 2, 1890, at St. Paul, Minn., and was educated at the University of Illinois and the Biltmore Forest School, where he graduated in 1909. In 1910, he entered the employ of the Joyce-Watkins Company and from that time until 1920 was in charge of work at Nashville, Tenn., and St. Louis, Mo. In 1920, he was elected vice-president and in 1932, president, to succeed his father. At the time of his death he was also president of the Arrow Transportation Company.

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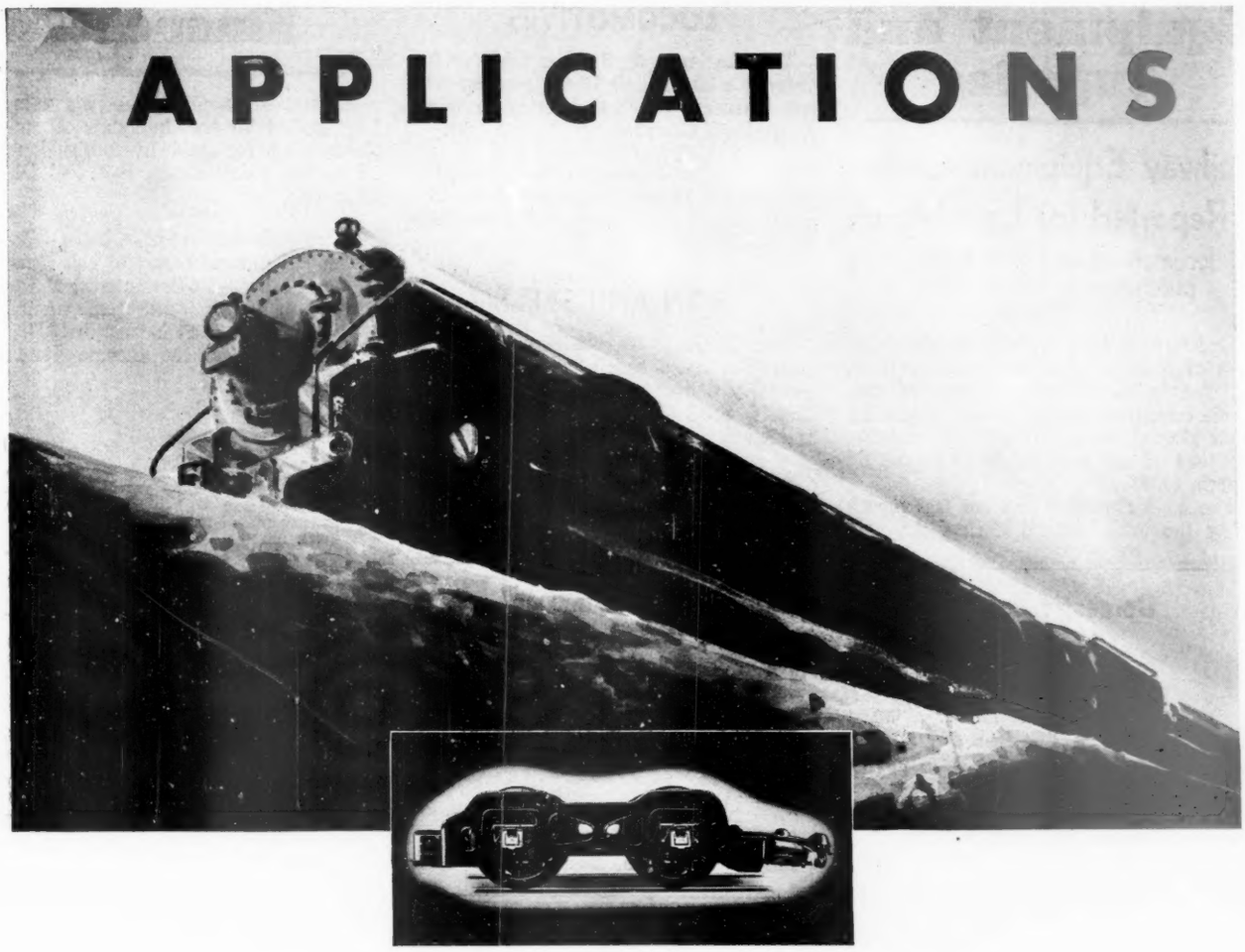
APPLICATIONS



DICTATED BY EXPERIENCE!

During the first two months of 1936 there were 50 new locomotives ordered. Eleven were switchers, twenty were mallets and 19 for passenger and freight train service.

Of the latter nineteen locomotives suitable for Booster application, seventeen were equipped with The Locomotive Booster.

These applications were all made by railroads having a previous wide experience with the advantages and maintenance economies that The Locomotive Booster brings.

Booster Repair Parts made by the jigs and fixtures that produced the original are your best guarantee of satisfactory performance.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

Equipment and Supplies

Railway Equipment Orders Reported for Last Month

13 locomotives and 647 freight cars purchased in March—Also 61,300 tons of rail

Orders have been reported in March issues of *Railway Age* for 13 locomotives, 627 freight cars and 61,300 tons of rail. These compare respectively with orders for eight locomotives, no freight cars, and 58,418 tons of rail reported in the issues of March, 1935.

The 13 locomotives ordered last month bring the total ordered during the first three months of this year to 73, as compared with nine in the first quarter of 1935 and 83 in last year's entire 12 months. Included among this year's orders are 63 steam locomotives, more than twice as many as the 28 of that type ordered throughout 1935. Furthermore, there were outstanding on March 23 inquiries for eight steam and seven Diesel-electric locomotives and plans had been announced for purchase of 10 others of the former type.

The 627 freight cars ordered last month bring the 1936 total to date to 8,913 or more than ten times the total ordered during the first quarter of 1935 and 47 per cent of last year's 12 months' total of 18,699. Additional business in prospect on March 31 included 2,500 freight cars for which inquiries had been issued and 3,000 cars or underframes on which alternate bids had been received.

The situation in the passenger car field remains the same as outlined in the *Railway Age* of March 7, with 1936 orders to date for 37 cars, excluding units for four streamlined trains as compared with 63 passenger-train cars ordered throughout 1935. No passenger train cars were ordered last month but there remains outstanding the inquiry for 50 coaches.

The tonnage of rails ordered thus far in 1936 is already 72 per cent of last year's 12 months figure. The 61,300 tons ordered last month brought the 1936 total to date to 359,600 tons as compared with 186,400 tons ordered during the first quarter of 1935 and total 1935 orders for 495,300 tons. Details of the equipment orders are shown in the accompanying table.

Domestic Equipment Orders Reported in Issues of the Railway Age in March, 1936

LOCOMOTIVES

Date	Name of Company	No.	Type	Builder
Mar. 14	Northern Pacific	12	4-6-6-4	American Locomotive Co.
Mar. 21	Great Lakes Steel Corp.	1	Switching	H. K. Porter Company

FREIGHT CARS

Date	Name of Company	No.	Type	Builder
Mar. 14	Great Northern	500	Ore	American Car & Foundry Co.
Mar. 21	Delaware & Hudson	50	Hopper	Company Shops
Mar. 21	Weyerhaeuser Timber Co.	75	Logging	Pacific Car & Foundry
Mar. 21	Charles Lennig & Co.	2	Tank	Gen. American Trans. Corp.

LOCOMOTIVES

THE LASALLE & BUREAU COUNTY has ordered a double-unit 70-ton propane-electric Plymouth locomotive, from the Fate-Root-Heath Company.

THE JOPLIN-PITTSBURG has ordered a double-unit 70-ton propane-electric Plymouth locomotive, from the Fate-Root-Heath Company.

IRON AND STEEL

THE NORFOLK & WESTERN has placed orders for 20,000 tons of 131-lb. steel rail, for early delivery as follows: Carnegie-Illinois Steel Corporation, 15,000 tons; Bethlehem Steel Company, 5,000 tons.

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered 3,000 tons of rails and fastenings from the Carnegie-Illinois Steel Company. Orders for the balance of the 35,000 tons of rails, which this road was considering purchasing, have been held up indefinitely.

SIGNALING

THE STATE HIGHWAY COMMISSION OF INDIANA has placed an order with the Western Railroad Supply Company, Chicago, for 113 standard A.A.R. flashing-light crossing signals with masts, bases and pinnacles, together with an equal number of cast-iron cross-buck signs and reflectorized stop-on-red signal signs. These signals are to be installed as a part of the federal aid program of improving highway safety in Indiana and will be distributed and installed on the following roads: C. & O., 4 signals; C. I. & L., 8 signals; C. M. St. P. & P., 5 signals; C. C. C. & St. L., 16 signals; C. & E. I., 4 signals; N. Y. C. & St. L., 19 signals; B. & O., 6 signals; P. M., 2 signals; Southern, 2 signals; P. & E., 2 signals; Penna., 32 signals; G. T. W., 4 signals; I. C., 8 signals.

MISCELLANEOUS

Air Conditioning

The refrigeration division of the Waukesha Motor Company has received orders for air-conditioning equipment from the St. Louis-San Francisco, the Southern Pacific and the Texas & Pacific, the latter providing for five installations, in addition to that ordered in January.

Financial

ALCOLU.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon part of its line from Alcolu, S. C., to Olanta, 25 miles.

BANGOR & AROOSTOOK.—*Annual Report.*—The 1935 annual report of this company shows net income, after interest and other charges, of $873,752, a decrease of $73,641 as compared with net income in 1934. Selected items from the Income Statement follow:

	1935	Increase or Decrease Compared with 1934
RAILWAY OPERATING REVENUES	$6,067,315	−$100,575
Maintenance of way	1,101,143	+19,744
Maintenance of equipment	1,000,712	−34,253
Transportation	1,529,880	+101,875
TOTAL OPERATING EXPENSES	3,969,370	+43,340
Operating ratio	65.42	+1.77
NET REVENUE FROM OPERATIONS	2,097,945	−143,915
Railway tax accruals	510,512	−18,139
Railway operating income	1,587,314	−125,461
Equipment and joint facility rents	6,197	+25,230
NET RAILWAY OPERATING INCOME	1,593,511	−100,231
Non-operating income	42,278	−3,008
INCOME AVAILABLE FOR FIXED CHARGES	1,622,496	−108,480
Interest on funded debt	745,044	−37,984
TOTAL DEDUCTIONS FROM GROSS INCOME	748,743	−34,839
NET INCOME	$873,752	−$73,641

BOSTON & MAINE.—*Annual Report.*—The 1935 annual report of this road shows net income, after interest and other charges, of $206,763, a decrease of $86,728 as compared with net income in 1934. Selected items from the Income Account follow:

	1935	Increase or decrease
Average mileage operated	1,997.23	−40.89
RAILWAY OPERATING REVENUES	$43,624,737	+$1,469,124
Maintenance of way	5,178,735	−55,285
Maintenance of equipment	6,596,980	+785,061
Transportation	17,817,069	+746,405
TOTAL OPERATING EXPENSES	32,549,275	+1,677,004
Operating ratio	74.61	+1.38
NET REVENUE FROM OPERATIONS	11,075,461	−207,880
Railway tax accruals	2,425,423	−6,352
Railway operating income	8,646,349	−174,611
Equipment and joint facility rents—Net Dr.	2,028,431	+100,985
NET RAILWAY OPERATING INCOME	6,617,917	−275,596
Non-operating income	1,152,236	+122,090
GROSS INCOME	7,770,153	−153,505
Rent for leased roads	1,242,361	+2,276
Interest on funded debt*	5,560,663	−19,940
TOTAL FIXED CHARGES	7,489,924	−98,468
NET INCOME	$206,763	−$86,728

* Interest amounting to $177,005.39 for 1935 and $163,740.80 for 1934 accrued on bonds of Boston & Maine Railroad held in Sinking Fund is included in account "Income Applied to Sinking Funds."

Continued on next left-hand page

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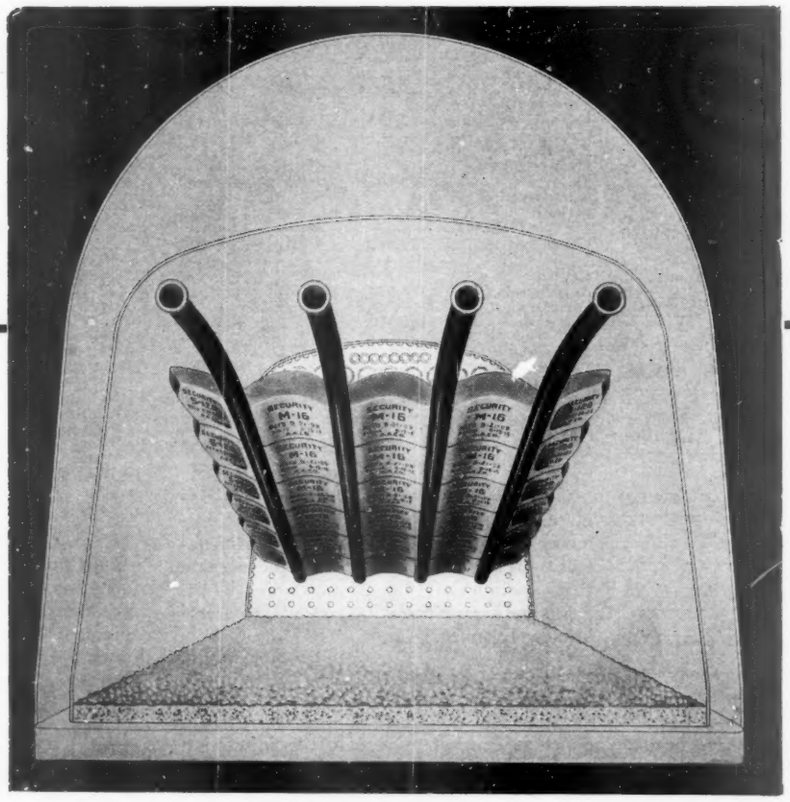

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Refractory Specialists

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BALTIMORE & OHIO.—*Equipment Trust.*—The Interstate Commerce Commission has authorized this company to waive the redemption right on $1,900,000 of its series H equipment trust certificates held by the Public Works Administration.

BESSEMER & LAKE ERIE.—*Equipment Trust.*—The Interstate Commerce Commission has authorized this company to issue $7,000,000 of equipment trust 2½ per cent certificates, maturing in installments until 1951. The issue is authorized for sale to the United States Steel Corporation at par.

BOSTON & MAINE.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $3,600,000 of 5 per cent bonds to reimburse its treasury for expenditures in retiring bonds of subsidiary companies.

CANADIAN NATIONAL.—*Annual Report.*—The 1935 annual report for this system shows net deficit, after interest and other charges, of $48,878,181, as compared with net deficit of $49,605,719 in 1934. Selected items from the Income statement follow:

	1935	1934	Increase or decrease
Average mileage operated	23,651.83	23,675.91	−24.08
RAILWAY OPERATING REVENUES	$173,184,501	$164,902,501	+$8,282,000
Maintenance of way	34,420,886	33,544,106	+876,780
Maintenance of equipment	34,393,564	32,574,793	+1,818,771
Transportation	77,131,971	72,754,822	+4,377,149
TOTAL OPERATING EXPENSES	158,926,248	151,936,078	+6,990,170
Operating ratio	91.77	92.14	−0.37
NET REVENUE FROM OPERATIONS	14,258,253	12,966,423	+1,291,830
Railway tax accruals	5,209,133	5,241,857	−32,724
Railway operating income	8,955,082	7,677,751	+1,277,331
Hire of freight cars—Dr.	1,019,933	904,639	+115,294
Joint facility rents—Dr.	2,269,417	2,231,818	+37,599
NET RAILWAY OPERATING INCOME	7,424,121	6,324,680	+1,099,441
Income available for fixed charges	8,014,635	8,616,760	−602,125
Rent for leased roads	1,372,712	1,372,037	+675
TOTAL FIXED CHARGES	56,892,817	58,222,480	−1,329,663
NET DEFICIT*	$48,878,181	$49,605,719	−$727,538

* Before interest on Dominion Government loans.

CANADIAN PACIFIC.—*Bonds.*—A syndicate of Canadian financial houses headed by Wood, Gundy & Co. has bought the entire issue of $15,000,000 of this company's convertible 3 per cent collateral trust bonds, due in 9½ years. The bonds are convertible into common stock from 1937 to 1944 at four shares of stock ($25 par) for each $100 of bond. The bankers have offered the issue at 94.44 to yield 3.70 per cent.

Further Offering.—A syndicate headed by Wood, Gundy & Co., Ltd., has also offered $8,000,000 of 2½ per cent non-convertible collateral trust bonds of this company, due April 1, 1939; and $15,000,000 2½ per cent non-convertible collateral trust bonds, due April 1, 1941. The offering price for the 2½ per cent three-year bonds is 100 and for the 2½ per cent five-year bonds 96.56 and interest, yielding 3.25 per cent.

These issues are secured by $120 principal amount of Canadian Pacific 4 per cent consolidated perpetual debenture stock for each $100 principal amount of the new bonds.

CENTRAL RAILROAD OF NEW JERSEY.—*Annual Report.*—The 1935 annual report of this company shows net deficit, after interest and other charges, of $2,346,737, as compared with net deficit of $1,536,070 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or Decrease
Average Mileage Operated	681.20	687.99	−6.79
RAILWAY OPERATING REVENUES	$29,522,639	$29,022,115	+$500,524
Maintenance of way	1,991,273	1,653,108	+338,165
Maintenance of equipment	5,489,603	4,972,514	+517,089
Transportation	12,195,973	11,462,692	+733,280
TOTAL OPERATING EXPENSES	21,462,672	20,247,792	+1,214,879
Operating ratio	72.70	69.77	+2.93
NET REVENUE FROM OPERATIONS	8,059,967	8,774,322	−714,355
Railway tax accruals	4,431,875	4,545,868	−113,992
Equipment rents	1,330,002	1,030,272	+299,729
Joint facility rents	97,215	116,369	−19,153
NET RAILWAY OPERATING INCOME	2,192,692	3,060,752	−868,059
Non-operating income	1,039,987	1,037,824	+2,162
GROSS INCOME	3,232,680	4,098,576	−865,896
Rent for leased roads	2,388,924	2,385,014	+3,910
Interest on funded debt	2,515,160	2,573,421	−58,260
TOTAL DEDUCTIONS FROM GROSS INCOME	5,579,418	5,634,647	−55,229
NET INCOME (deficit)	$2,346,737	$1,536,070	−$810,667

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Acquisition.*—The Interstate Commerce Commission has authorized the trustees of this company to acquire and operate that portion of the Minneapolis & St. Louis between Storm Lake, Iowa, to Rembrandt, 12 miles.

CHICAGO & NORTH WESTERN.—*Loan Pledges.*—The Reconstruction Finance Corporation has petitioned the federal district court at Chicago to vacate the injunction against the government loaning agency, restraining it from selling the collateral pledged with it by the North Western for loans. In its petition, the R. F. C. states that it desires to be in a position to sell the securities at any time it may deem it advisable to do so. The R. F. C., late in 1935, negotiated with the management of the road, seeking an agreement whereby the government agency would be permitted to sell the securities. The carrier opposed the sale of the securities at the time and the R. F. C. in turn prepared the petition for the Chicago federal court. The collateral which the R. F. C. contemplates selling consists of 20,850 shares of preferred stock of the Union Pacific, $64,000 par amount of New York Central consolidated 4's of 1998, and $100,000 par amount of New York Central refunding and improvement series A 4½'s of 2013.

At a hearing on March 30, Federal Judge John P. Barnes gave the parties interested in securing modification of the injunction 15 days to file briefs and parties interested in preventing the modification 10 days for the filing of their briefs.

DELAWARE & HUDSON.—*Annual Report.*—The 1935 annual report of this road shows net deficit, after interest and other charges, of $2,774,976, as compared with net deficit of $2,601,062 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or Decrease
RAILWAY OPERATING REVENUES	$22,884,178	$23,196,312	−$312,134
Maintenance of way	3,407,719	3,392,619	+15,100
Maintenance of equipment	6,210,299	5,595,043	+615,256
Transportation	8,909,075	8,979,787	−70,712
TOTAL OPERATING EXPENSES	20,555,726	20,447,906	+107,819
Operating ratio	89.83	88.15	−1.68
NET REVENUE FROM OPERATIONS	2,328,451	2,748,405	−419,953
Railway tax accruals	1,080,537	898,767	+181,769
Railway operating income	1,247,496	1,847,551	−600,054
Hire of freight cars—Cr.	176,733	256,562	−79,829
NET RAILWAY OPERATING INCOME	1,328,691	2,016,405	−687,713
Total Other Income	190,034	189,428	+605
INCOME AVAILABLE FOR FIXED CHARGES	1,494,549	2,179,958	−685,409
Rent for leased roads	1,786,261	1,787,875	−1,614
Interest on funded debt	2,449,837	2,912,525	−462,687
TOTAL DEDUCTIONS FROM GROSS INCOME	4,269,525	4,781,021	−511,495
NET INCOME DEFICIT	$2,774,976	$2,601,062	−$173,914

DELAWARE, LACKAWANNA & WESTERN.—*Equipment Trust Certificates.*—A group of investment houses headed by Brown, Harriman & Co., has offered $3,619,000 equipment trust 4 per cent certificates of this company at prices to yield from 0.375 per cent to 3.2 per cent, depending on maturity dates which range from the current year to 1949. This is an issue originally sold by the railroad to the Public Works Administration at par and recently repurchased by it from the Reconstruction Finance Corporation at 104. The issue was sold by the railroad to the bankers at 106.097. Another issue of certificates, repurchased from the R. F. C., totaling $1,033,000, maturing in installments until 1944, was sold to the Marine Midland Trust Company at 105.625.

DENVER & RIO GRANDE WESTERN.—*Plan to Be Filed by May 1.*—A plan of reorgan-

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THE SUPERHEATER COMPANY

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REPRESENTATIVE OF AMERICAN THROTTLE COMPANY, INC.

ization of this company is to be filed by May 1, it was announced in New York on March 26, following a meeting of representatives of parties at interest.

ERIE.—*P. W. A. Maintenance Loan.*—The Interstate Commerce Commission has authorized this company to purchase 18,090 tons of first quality rail and 1,175 tons of second quality, together with track fastenings, etc., to cost $1,098,200, to be financed by a loan from the Public Works Administration.

GREAT NORTHERN.—*Convertible Bonds.*—This company has formally notified the holders of its maturing 7 per cent general mortgage bonds of its new issue of 4 per cent convertible bonds to meet this maturity—the new issue being offered first to its stockholders; thereafter such part of the $99,422,400 issue not taken by stockholders may be subscribed for by holders of the maturing bonds.

GULF, MOBILE & NORTHERN.—*Annual Report.*—The 1935 annual report of this company shows net income, after interest and other charges, of $404,710, as compared with net deficit of $170,739 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or Decrease
Average Mileage Operated	936.17	961.52	−25.35
RAILWAY OPERATING REVENUES	$6,173,210	$5,230,957	+$942,252
Maintenance of way	767,960	677,681	+90,279
Maintenance of equipment	936,752	772,423	+164,329
Transportation	1,760,656	1,619,844	+140,812
TOTAL OPERATING EXPENSES	4,089,420	3,785,019	+304,400
Operating ratio	66.24	72.36	−6.12
NET REVENUE FROM OPERATIONS	2,083,790	1,445,938	+637,851
Railway tax accruals	377,216	352,000	+25,216
Equipment rents—Net	324,060	302,475	+21,584
Joint facility rents—Net	279,256	278,596	+660
NET RAILWAY OPERATING INCOME	1,100,942	512,546	+588,395
Non-operating income	111,016	117,506	−6,490
GROSS INCOME	1,211,959	630,053	+581,905
Rent for leased road	263,400	263,400	.....
Interest on funded debt	528,564	519,399	+9,164
TOTAL DEDUCTIONS FROM GROSS INCOME	807,249	800,792	+6,456
NET INCOME	$404,710	$170,739	+$575,449

INDIANAPOLIS UNION.—*Bonds.*—Hallgarten & Co. and A. G. Becker & Co. are offering, subject to the approval of the Interstate Commerce Commission, $4,714,000 of refunding and improvement mortgage, series B 3½ per cent bonds of this company due 1986, the bonds to be guaranteed by the New York Central and the Pennsylvania. The issue is offered to the public at 103⅝ to yield 3.35 per cent, and the offering houses state that they have agreed to buy the bonds from the railroad at 102.33.

KANSAS CITY SOUTHERN.—*Annual Report.*—The 1935 annual report of this company shows net deficit, after interest and other charges, of $955,730, as compared with net deficit of $1,009,127 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or Decrease
Average Mileage Operated	878.78	878.78	.....
RAILWAY OPERATING REVENUES	$9,981,090	$9,650,064	+$331,026
Maintenance of way	987,963	911,718	+76,245
Maintenance of equipment	1,713,080	1,644,292	+68,787
Transportation	3,159,741	3,060,842	+98,899
TOTAL OPERATING EXPENSES	7,205,687	7,095,617	+110,069
Operating ratio	79.98	81.57	−1.59
NET REVENUE FROM OPERATIONS	2,775,403	2,554,447	+220,956
Railway tax accruals	776,885	775,509	+1,376
Railway operating income	1,995,141	1,776,647	+218,493
Equipment rents—Net Dr.	419,157	402,438	+16,718
Joint facility rents—Net Dr.	89,580	82,756	+6,824
NET RAILWAY OPERATING INCOME	1,486,403	1,291,452	+194,950
Non-operating income	440,742	656,070	215,228
GROSS INCOME	1,927,145	1,947,523	−20,378
Rent for leased roads	167,921	167,873	+48
Interest on funded debt	2,686,560	2,680,920	+5,640
TOTAL FIXED CHARGES	2,848,058	2,923,932	−75,874
NET INCOME (Deficit)	$955,730	$1,009,127	−$43,397

LEHIGH & NEW ENGLAND.—*Annual Report.*—The annual report of this company for 1935 shows net income, after interest and other charges, of $433,709, as compared with net income of $362,577 in 1934. Selected items from the Income Statement follow:

	1935	1934	Increase or Decrease
RAILWAY OPERATING REVENUES	$3,432,725	$3,455,843	−$23,118
Maintenance of way	396,241	435,568	−39,326
Maintenance of equipment	711,789	769,814	−58,025
Transportation	1,256,646	1,200,106	+56,539
TOTAL OPERATING EXPENSES	2,593,599	2,666,757	−73,157
Operating ratio	75.56	77.17	−1.61
NET REVENUE FROM OPERATIONS	839,125	789,086	+50,039
Railway tax accruals	83,391	82,065	+1,325
Railway operating income	755,541	706,923	+48,617
Equipment and joint facility rents—Cr.	67,255	54,821	+12,433
NET RAILWAY OPERATING INCOME	822,797	761,745	+61,051
Non-operating income	27,199	28,138	−939
TOTAL INCOME	849,996	789,884	+60,111
Interest on funded debt	388,804	398,234	−9,429
TOTAL FIXED CHARGES	393,944	402,158	−8,213
NET INCOME	$433,709	$362,577	+$71,131
Disposition of net income:			
Income applied to sinking and other reserve funds	43,370	.....	+43,370
Income Balance Transferred to Profit and Loss	$390,338	$362,577	+$27,760

LEHIGH VALLEY.—*Equipment Trust.*—The Interstate Commerce Commission has authorized this company to assume liability for $1,755,000 of its series V equipment trust of 1934 certificates to be sold to the Public Works Administration at par in connection with the purchase of equipment, and to waive the right of redemption on $3,345,000 of these certificates heretofore issued.

LOUISIANA SOUTHERN.—*Abandonment.*—The Interstate Commerce Commission has authorized the co-receivers of this company to abandon a branch line extending from Reggio, La., to Shell Beach, 6.5 miles.

MILWAUKEE, ROCKFORD & SOUTHWESTERN.—*Acquisition.*—The Interstate Commerce Commission has authorized this company to acquire and operate the line formerly owned by the Rutland, Toluca & Northern, extending from Granville, Ill., to Toluca, 21 miles; and to issue $100,000 of common stock for the purchase of the property. The Commission denied that part of the application seeking authority to issue $100,000 of bonds, and dismissed that part seeking permission for an issue of $100,000 of notes to the Reconstruction Finance Corporation.

MINNEAPOLIS & ST. LOUIS.—*Abandonment.*—The Interstate Commerce Commission has authorized the receivers of this company to abandon a line extending from Spencer, Iowa, to Storm Lake, 36.9 miles.

MISSOURI PACIFIC. — *Reorganization Plan.*—The Interstate Commerce Commission has postponed from March 31 to April 14 the date for the resumption of hearings on the reorganization plan, before Oliver E. Sweet, director of the commission's Bureau of Finance, at Washington.

MOBILE & OHIO.—*Abandonment.*—The receivers have applied to the Interstate Commerce Commission for authority to abandon a branch line from Mann, Ala., to Dawes, 7 miles.

NEW YORK & PENNSYLVANIA.—*Abandonment.*—Division 4 of the Interstate Commerce Commission has authorized this company to abandon its entire line from Canisteo, N. Y., to Ceres, 57 miles. In July, 1935, trestles and several miles of the line were washed out in a severe storm and the revenues have been insufficient to permit of the restoration of any of the line destroyed.

NEW YORK CENTRAL.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire control of the Genesee Falls by purchase of its remaining stock. The N. Y. C. now owns nearly 50 per cent of the stock.

NEW YORK CENTRAL.—*Securities.*—The Interstate Commerce Commission has authorized this company to issue at par $2,593,000 of 4 per cent serial collateral notes (secured by $4,646,000 of its refunding and improvement mortgage bonds). The notes will mature in installments from 1937 to 1944, will be sold to the Public Works

Continued on next left-hand page

TAKE YOUR CHOICE

IT has often been remarked that the greatest stimulant steam locomotive designing ever received was the development and introduction of the electric locomotive.

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Administration, and the proceeds of the sale will be used by the railroads for maintenance.

NEW YORK, NEW HAVEN & HARTFORD.—*Annual Report.*—The 1935 annual report of this road shows net deficit, after interest and other charges, of $3,560,469, as compared with net deficit of $5,532,113 in 1934. Selected items from the Income Account follow:

	1935	Comparison with 1934 Increase or Decrease
RAILWAY OPERATING REVENUES	$71,113,279	+$1,830,169
Maintenance of way	7,689,635	−177,922
Maintenance of equipment	12,070,641	−120,631
Transportation	27,680,623	+726,193
TOTAL OPERATING EXPENSES	52,414,422	−299,788
Operating ratio	73.71	−2.38
NET REVENUE FROM OPERATIONS	18,698,856	2,129,958
Railway tax accruals	4,134,125	−377,751
Railway operating income	14,542,788	+2,506,362
Equipment rents	.....	.....
Joint facility rents	.....	.....
NET RAILWAY OPERATING INCOME	8,179,548	+2,562,528
Non-operating income	4,470,817	−615,623
GROSS INCOME	12,650,365	+1,946,904
Rent for leased roads	2,769,073	−20,615
Interest on funded debt	11,301,749	−85,132
TOTAL DEDUCTIONS FROM GROSS INCOME	16,210,835	−24,740
NET INCOME	$3,560,469*	+$1,971,644

* Deficit.

NEW YORK, ONTARIO & WESTERN.—*Annual Report.*—The 1935 annual report of this company shows net income, after interest and other charges, of $3,585, an increase of $82,005, as compared with the net deficit in 1934. Selected items from the Income Account follow:

	1935	Comparison with 1934 Increase or Decrease
RAILWAY OPERATING REVENUES	$8,590,512	−$799,318
Maintenance of way	921,272	−175,208
Maintenance of equipment	1,483,773	−183,955
Transportation	3,544,997	−306,757
TOTAL OPERATING EXPENSES	6,389,754	−698,285
Operating ratio	74.38	−1.11
NET REVENUE FROM OPERATIONS	2,200,758	−101,032
Railway tax accruals	397,635	−39,705
Railway operating income	1,802,668	−57,945
Equipment rents—Net	352,859	−172,934
Joint facility rents—Net	89,249	+6,506
NET RAILWAY OPERATING INCOME	1,360,560	+108,482
Non-operating income	239,511	−4,952
GROSS INCOME	1,600,071	103,530
Rent for leased roads	230,322	−8,040
Interest on funded debt	1,218,023	−832
TOTAL DEDUCTIONS FROM GROSS INCOME	1,596,486	+21,524
NET INCOME	$3,585	+$82,005

PHILADELPHIA & BEACH HAVEN.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon its entire line extending from Manahawken, N. J., to Beach Haven, 12.1 miles.

SOUTHERN.—*Objects To Abandoning Line to Be Flooded.*—The Southern has filed with the Interstate Commerce Commission a reply to the petition of the Tennessee Valley Authority which had asked the commission to require it to file an application for authority to abandon its line from Vasper, Tenn. to Lafollette, which the T. V. A. proposed to flood as part of the pool for the Norris Dam. The road stated that the T. V. A. is proposing to take its property for public purposes without just compensation. The company said it had no desire to abandon the branch but is being forced by the acts of the government and it denied that the commission had authority to compel it to file an application. It is pointed out that the T. V. A. has authority to condemn land and that Congress expressly empowered it to enter into contracts with railroads for relocation of their lines to avoid flooding but that it has made no proposal to the Southern except a tender of a trackage right agreement over a parallel line of the Louisville & Nashville which it has arranged to protect from flooding.

SOUTHERN PACIFIC.—*Abandonment.*—The Interstate Commerce Commission has affirmed a decision by Division 4 denying authority to this company to abandon a portion of its Promontory branch—Kelton, Utah, to Lucin, 55 miles. Commissioners Mahaffie, Meyer, Miller, and Caskie dissented. Commissioner Tate did not participate.

TEXAS & PACIFIC.—*Annual Report.*—The 1935 annual report of this company shows net income, after interest and other charges, of $1,382,277, as compared with net income of $1,031,943 in 1934. Selected items from the Income Account follow:

	1935	1934	Increase or Decrease
Average Mileage Operated	1,949.94	1,950.06	.....
RAILWAY OPERATING REVENUES	$23,479,056	$22,289,955	+$1,190,000
Maintenance of way	2,407,945	2,305,457	+102,487
Maintenance of equipment	4,101,069	3,825,446	+275,623
Transportation	7,127,782	6,584,467	+543,314
TOTAL OPERATING EXPENSES	15,990,556	15,110,840	+879,715
Operating ratio	68.10	67.79	+.31
NET REVENUE FROM OPERATIONS	7,489,400	7,179,114	+310,285
Railway tax accruals	1,284,319	1,205,206	+79,112
Railway operating income	6,192,759	5,961,063	+231,696
Equipment and joint facility rents—Net Dr.	1,140,655	1,228,311	−87,655
NET RAILWAY OPERATING INCOME	5,052,104	4,732,752	+319,352
Non-operating income	476,357	509,783	−33,426
INCOME AVAILABLE FOR FIXED CHARGES	5,460,549	5,167,234	+293,314
Interest on funded debt	4,044,199	4,111,602	−67,403
NET INCOME	$1,382,277	$1,031,943	+$350,333

UNION.—*Equipment Trust Certificates.*—The Interstate Commerce Commission has authorized this company to issue $2,700,000 of 2½ per cent equipment trust certificates, maturing in installments 1937 to 1951. The issue is authorized for sale at par to the United States Steel Corporation.

VIRGINIAN.—*Annual Report.*—The 1935 annual report of this company and its subsidiaries shows net income, after interest and other charges, of $4,143,336, as compared with net income of $3,518,243 in 1934. Selected items from the Income Statement follow:

	1935	1934	Increase or Decrease
Average Mileage Operated	619.33	619.33	.....
RAILWAY OPERATING REVENUES	$15,783,579	$14,443,351	$1,340,228
Maintenance of way	1,171,224	1,165,626	5,598
Maintenance of equipment	2,793,482	2,443,013	350,469
Transportation	2,735,040	2,539,896	195,144
TOTAL OPERATING EXPENSES	7,178,907	6,702,904	476,003
Operating ratio	45.48	46.40	−0.92
NET REVENUE FROM OPERATIONS	8,604,672	7,740,446	864,225
Railway tax accruals	1,936,300	1,779,400	156,900
Railway operating income	6,668,341	5,960,697	707,644
Equipment rents—Net	511,536	689,208	−177,671
Joint facility rents—Net	43,275	77,221	−33,946
NET RAILWAY OPERATING INCOME	7,223,153	6,727,127	496,025
Total Other Income	71,847	57,157	14,689
TOTAL INCOME	7,295,001	6,784,285	510,715
Interest on funded debt	3,115,205	3,151,527	−36,321
TOTAL FIXED CHARGES	3,118,623	3,235,777	−117,154
NET INCOME	$4,143,336	$3,518,243	$625,093

Average Prices of Stocks and of Bonds

	Mar. 31	Last week	Last year
Average price of 20 representative railway stocks..	47.50	48.35	28.79
Average price of 20 representative railway bonds..	80.28	80.71	70.32

Dividends Declared

Carolina, Clinchfield & Ohio.—$1.00, quarterly; Stamped Certificates, $1.25, quarterly, both payable April 20 to holders of record April 10.

Piedmont & Northern.—75¢, quarterly, payable April 10 to holders of record March 31.

Reading Company.—50¢, quarterly, payable May 14 to holders of record April 16.

Virginian.—Preferred, $1.50, quarterly, payable May 1 to holders of record April 17.

Pittsburgh, Bessemer & Lake Erie.—75¢, semi-annually, payable October 1 to holders of record September 15.

TRADE PUBLICATION

CONSOLIDATED CATALOG.—The American Brake Shoe & Foundry Company, New York, has issued Bulletin 36, of 32 pages, illustrating the products of its 13 subsidiary companies. Among products applicable to the railways are brake shoes, armored curbing, manhole covers, gratings, grate bars, gears and other machinery parts, babbitt metal, journal bearings, trackwork and manganese steel castings, car wheels, welding rods and crossing signals.

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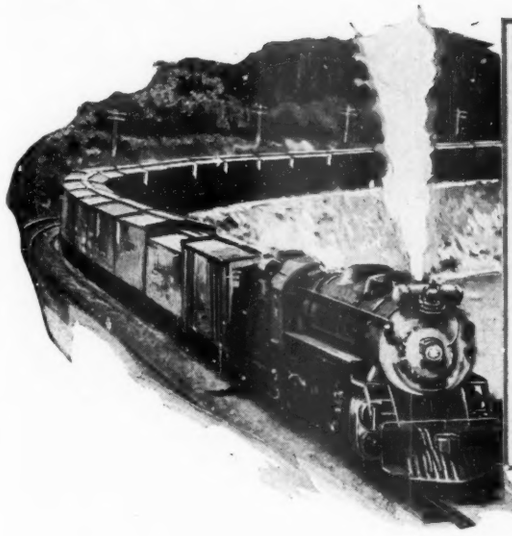

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HUNT-SPILLER *Air Furnace* GUN IRON has successfully demonstrated its ability to measure up to all of the requirements of modern operation.

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Railway Officers

EXECUTIVE

B. F. Moffatt, traffic manager of the Minneapolis & St. Louis, effective April 1, was appointed executive representative with headquarters as before at Minneapolis.

William W. Rhoads, whose appointment as assistant to president of the Reading and the Central of New Jersey was noted in the *Railway Age* of March 28, entered the service of the Reading on September 26, 1906, as a messenger at Port Richmond, Philadelphia, and a year later was transferred as clerk to the Transportation department. On January 16, 1915, Mr. Rhoads was transferred to the office of the vice-president and general manager, as a clerk, and held various positions in that office until June 15, 1918, when he became secretary to the federal manager. On February 1, 1924, Mr. Rhoads was promoted to assistant chief clerk to vice-president, retaining this position until May 1, 1929, when he was appointed chief clerk. On July 1, 1935, Mr. Rhoads was appointed assistant to vice-president in charge of operation and maintenance, the position he held until his recent appointment.

William W. Rhoads

Charles Shalter Krick, vice-president of the Eastern region of the Pennsylvania, with headquarters at Philadelphia, Pa., has retired from active duty. Mr. Krick was born at Reading, Pa., where he attended the public schools and Carroll Institute. He was graduated from Lafayette College in 1887 as a civil engineer and in 1923 the honorary degree of Doctor of Engineering was conferred upon him by this college. After leaving college, Mr. Krick entered the service of the Pennsylvania as a rodman in the office of the assistant engineer of what was then known as the Schuylkill division. Three years later he was appointed assistant supervisor of track, which position he held successively on the Tyrone, Philadelphia and Schuylkill divisions until June, 1896, when he was appointed supervisor, in which position he served consecutively on the Schuylkill division, Middle division and the Pittsburgh division. Mr. Krick was appointed division engineer of the Eastern and Susquehanna divisions in January, 1903, transferred in a similar capacity to the Philadelphia Terminal division in August, 1903,

Charles Shalter Krick

and advanced to principal assistant engineer of the Philadelphia, Baltimore & Washington at Wilmington, Del., in January, 1906. He was appointed division superintendent of the New York Terminal division in August, 1910, and two years later he was appointed superintendent of the Manhattan division. In February, 1914, he was transferred to the Philadelphia Terminal division in the same capacity and in November, 1915, he was made acting general superintendent of the New Jersey general division and the West Jersey & Seashore. In May, 1916, Mr. Krick became general superintendent of the New Jersey division and the West Jersey & Seashore. He was advanced to assistant general manager of the eastern lines of the Pennsylvania in July, 1918, under the United States Railroad Administration, and upon the termination of federal control in March, 1920, he became general manager of the Eastern region at Philadelphia. Mr. Krick served in that capacity until October, 1923, when he was appointed vice-president of the Eastern region, which position he held until his retirement.

FINANCIAL, LEGAL AND ACCOUNTING

L. K. Goldtree has been appointed auditor of the Camas Prairie, with headquarters at Lewiston, Ida., succeeding **C. C. Petersen,** deceased.

TRAFFIC

W. W. Creighton has been appointed general agent for the Union Pacific at Toronto, Ont., succeeding **Geo. W. Vaux,** who has retired after nearly 25 years of service with this company.

George W. Shuman, export and import agent of the Erie, with headquarters at New York, has been appointed division freight agent at Scranton, Pa., succeeding **G. A. Lamb,** who has been appointed assistant to vice-president in charge of traffic at Cleveland, Ohio. **D. D. Jamieson** has been appointed assistant coal freight agent at New York.

Harold J. Foster, assistant general representative of the Maine Central, has been promoted to assistant general passenger agent of the Maine Central and of the Boston & Maine in Maine, with headquarters at Portland, Me.

H. L. Gibson has been appointed Pacific Coast representative for the Perishable division of the Freight Container Bureau of the Association of American Railroads. His headquarters will be at Sacramento, Cal.

O. R. Smith, assistant to general freight agent on the St. Louis Southwestern at Tyler, Tex., has been appointed assistant general freight agent, with the same headquarters, succeeding **H. N. Roberts,** who has resigned to become chairman of the Texas-Louisiana Tariff bureau, with headquarters at Dallas, Tex.

C. L. Chapman, assistant to vice-president in charge of traffic of the Erie, with headquarters at Cleveland, Ohio, has been appointed eastern freight traffic manager, with headquarters at New York, succeeding **William H. Stadelman,** who has been appointed coal traffic manager, with headquarters at Cleveland. Mr. Stadelman succeeds **G. H. Reinbrecht,** who recently resigned to accept a similar position with the Chesapeake & Ohio. Mr. Chapman was born at Odessa, N. Y., and received his early education at Montour Falls and Elmira, N. Y. After serving the Erie for seven years at Rochester, N. Y., he was transferred to the general freight office in New York. He served successively as assistant general traffic manager, acting general passenger agent, general freight agent, and assistant to vice-president in charge of traffic, which position he held until his recent appointment as eastern freight traffic manager.

C. L. Chapman

William H. Stadelman was born at Castile, N. Y., and was educated at Canaseraga, N. Y., and Elmira, N. Y. He entered the service of the Erie as station agent at Hohokus, N. J., in 1912. After serving in various capacities in the freight traffic department, Mr. Stadelman became

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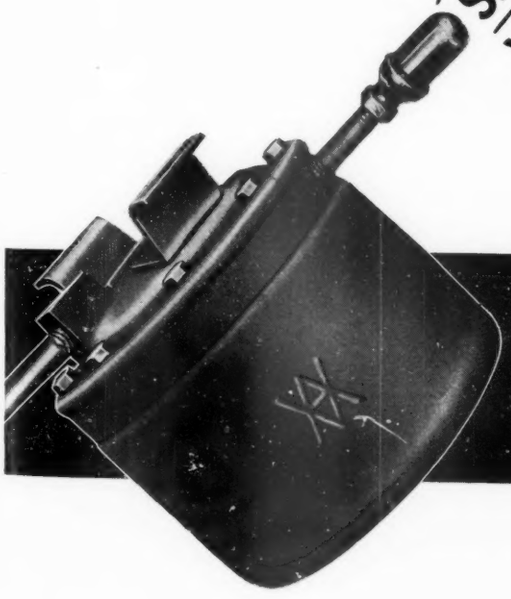

A SUPERIOR SIGNAL VALVE

WESTINGHOUSE AIR BRAKE COMPANY

General Office and Works, WILMERDING, PA.

assistant general eastern freight agent at New York in 1926. Three years later he was made general eastern freight agent and in 1930 he was appointed assistant

William H. Stadelman

freight traffic manager. Mr. Stadelman became eastern freight traffic manager in 1931, the position he held until his recent appointment as coal traffic manager.

OPERATING

W. E. Lamb, superintendent on the Missouri Pacific at Falls City, Neb., who has been appointed general superintendent of the Southern district, with headquarters at Little Rock, Ark., as noted in the *Railway Age* of March 7, has been in active railroad service for 36 years. He was born on August 20, 1885, and first entered railway service in May, 1900, with the Gulf & Ship Island, serving with this company, the Vicksburg, Shreveport & Pacific, the Louisiana & Arkansas and the Louisiana Railway & Navigation Company as clerk, agent, operator, dispatcher and chief dispatcher, until July, 1906, when he entered the service of the Missouri Pacific as a dispatcher at McGehee, Ark. In the following year, Mr. Lamb was transferred

W. E. Lamb

to Monroe, La., and in July, 1911, he returned to McGehee as chief dispatcher. In March, 1917, he was advanced to trainmaster and, after serving in this capacity at various points, he was further advanced to superintendent on June 1, 1924, in which capacity he served successively at Van Buren, Ark., Monroe, La., Little Rock, Ark., and Falls City, Neb. His promotion to general superintendent became effective on March 1.

C. H. Wood, who has been appointed assistant general superintendent of transportation of the Missouri Pacific, with headquarters at St. Louis, Mo., as noted in the *Railway Age* of March 7, was born on August 9, 1884. He first entered the service of the Missouri Pacific in 1902, shortly thereafter becoming connected with the bridge and building department as a clerk. In 1905 Mr. Wood was appointed a statistician in the office of the chief engineer, and after two years in this capacity he was made chief clerk in the tie and timber department, later returning to his old position in the office of the chief engineer. Beginning in 1917, Mr. Wood served successively as assistant chief clerk to the general manager and as chief clerk to the general superintendent of transportation. In 1919, during federal control of the railroads, he served as supervisor of service

C. H. Wood

in the Southwest region for the United States Railroad Administration. Following the war he returned to the Missouri Pacific as office manager for the general superintendent of transportation, being appointed chief clerk to the general manager in 1923. In 1925, Mr. Wood was made office manager for two vice-presidents, and in the following year he was appointed office manager for the entire operating department at St. Louis, which position he was holding at the time of his recent appointment as assistant general superintendent of transportation, which was effective on March 1.

J. S. Bassett, assistant superintendent on the Missouri Pacific, who has been appointed superintendent of the Little Rock-Louisiana division, with headquarters at Monroe, La., as noted in the *Railway Age* of March 7, was born on August 13, 1886, and received his higher education at Iowa State College, Ames, Iowa. Except for two years during the World War when he served in the United States army, Mr. Bassett has been connected with the Missouri Pacific continuously since 1909. He entered the service in that year as an assistant on the engineering corps at St. Louis, Mo., and later served as a building inspector at Nevada, Mo. In 1912, he was appointed assistant engineer and served in this capacity at various points until 1917,

J. S. Bassett

when he joined the army. In July, 1919, Mr. Bassett returned to the Missouri Pacific as assistant engineer, being advanced to division engineer in 1923, which position he held until December, 1929, except for a period during 1924, when he served as assistant division engineer and another period during 1928, when he served as master of trains and track. In 1929, he was transferred to the operating department as assistant superintendent, serving in this capacity and as trainmaster and acting superintendent until his recent appointment as superintendent, effective March 1.

PURCHASES AND STORES

J. R. Watt, engineer maintenance of way of the Louisville & Nashville, has been appointed assistant purchasing agent, with headquarters as before at Louisville, Ky. Mr. Watt has been connected with the engineering and maintenance of way departments of the Louisville & Nashville for more than 30 years. He was born on

J. R. Watt

April 16, 1884, at Greenfield, Ohio, and attended the Salem Academy, South Salem, Ohio, and later the University of Ohio. He entered railway service in August, 1905, as a rodman on the Louisville division of the L. & N., serving as instrumentman and

assistant engineer on the Cumberland Valley and Louisville divisions, as assistant engineer at Birmingham, Ala., and for a short time in the chief engineer's office at Louisville. In 1914, he was promoted to roadmaster of the Nashville division, which position he held until 1917, when he was further advanced to general roadmaster, with headquarters at Louisville. On February 15, 1932, Mr. Watt was advanced to engineer maintenance of way, which position he held until his recent appointment.

ENGINEERING AND SIGNALING

L. L. Adams, division engineer of the Louisville & Nashville, with headquarters at Evansville, Ind., has been promoted to engineer maintenance of way, with headquarters at Louisville, Ky., to succeed **J. R. Watt,** who has been appointed assistant general purchasing agent.

MECHANICAL

L. E. Hilsabeck, car foreman on the Chicago Great Western at Oelwein, Iowa, has been appointed to the newly-created position of general car inspector of freight and passenger equipment, with the same headquarters.

OBITUARY

Everett M. Tucker, architect of the Missouri Pacific, with headquarters at St. Louis, Mo., died at the Missouri Pacific hospital in that city on March 24 of heart disease. Mr. Tucker was a native of Milton, Mass., and was 52 years of age. Prior to going with the Missouri Pacific about 25 years ago, he had served as architect for a railroad in Cuba.

William R. Askew, chairman of the freight traffic managers' committee of the Trunk Line Association, died on March 31 at St. Luke's Hospital, New York City, at the age of 62.

Lambert N. Hopkins, retired purchasing agent of the Chicago, Burlington & Quincy, whose death on March 17 was noted in the *Railway Age* of March 21, was born at Baltimore, Md., on April 26, 1852. He entered railway service as a clerk in the office of the ticket auditor of the Burlington in May, 1885. In the following year he was transferred to the trainmaster's office and in December, 1886, he was appointed assistant secretary and assistant treasurer of the Peoria Union Elevator Company, which was owned by the Burlington. For a short period during 1887 Mr. Hopkins was a clerk in the paymaster's department of the Burlington and he was then advanced to assistant paymaster. Mr. Hopkins was further advanced to paymaster in 1888, in which position he remained until March, 1891, when he was promoted to auditor of passenger accounts. From 1896 to 1899 he served in the commissary and he was then appointed supply agent. Mr. Hopkins was promoted to purchasing agent on July 1, 1905, from which position he retired in 1928.

Robert Park Graham, engineer maintenance of way of the Southern division of the Pennsylvania, died on March 17 at his home in Wilmington, Del. Mr. Graham was born at Altoona, Pa., on June 26, 1887, and was graduated from Pennsylvania State College in 1907, with the degree of Bachelor of Science in Civil Engineering. He entered the service of the Pennsylvania as a messenger in the telegraph office at Altoona on July 20, 1902, and served during successive summers as a clerk and rodman until he finished college. He reentered the service in June, 1907, as a rodman on the Middle division at Altoona. On November 1, 1913, he was transferred to the office of the chief engineer of maintenance of way at Philadelphia and on March 15, 1914, he was appointed assistant supervisor of the Conemaugh division at Freeport, Pa. He also served as assistant supervisor on the Baltimore division at York, Pa., and on the Philadelphia division at Paoli, Pa. On September 1, 1918, Mr. Graham was appointed supervisor of the Crosson division at Barnesboro, Pa. He subsequently served as supervisor of the Philadelphia division at Lemoyne, Pa., and of the Philadelphia Terminal division at West Philadelphia, Pa., and on October 1, 1927, he was appointed division engineer of the Buffalo division at Buffalo, N. Y., later serving as division engineer of the Middle division at Altoona, Pa. He was appointed superintendent of the Delaware division at Wilmington, Del., on May 16, 1928, and superintendent of the St. Louis division at Terre Haute, Ind., on May 16, 1929. Mr. Graham became engineer of maintenance of way, Central Pennsylvania division, at Williamsport, Pa., on June 1, 1931. On July 1, 1933, he was transferred to the Southern division in the same capacity, with headquarters at Wilmington, Del.

Norfolk and Western Railway Company

Fortieth Annual Report

Roanoke, Va., March 30, 1936.

The Annual Report for the year ended December 31, 1935, has been approved by the Board of Directors for submission to the stockholders. A synopsis follows:

The operated mileage of the Company was 2,112.57 miles. Including 27.21 miles leased from subsidiary companies and 26.99 miles operated under trackage rights, the first main track mileage was 2,166.77 miles and the total mileage of all tracks was 4,609.11 miles.

Following is a comparison of 1935 results with those for 1934:

	1935	1934	Increase or Decrease
Revenue from Freight	$73,661,074.79	$68,617,069.80	I. $5,044,004.99
Revenue from Passengers	1,841,601.75	1,780,032.08	I. 61,569.67
Revenue from Mail, Express and Miscellaneous	2,541,707.84	2,310,765.17	I. 230,942.67
Total Revenue from Operations	$78,044,384.38	$72,707,867.05	I. $5,336,517.33
Maintenance of Way and Structures	$8,577,223.51	$7,633,685.08	I. $943,538.43
Maintenance of Equipment	14,411,433.09	16,043,044.77	D. 1,631,611.68
Transportation — Expense of Operation	17,949,958.69	16,551,259.15	I. 1,398,699.54
Other Expenses	3,560,549.67	4,303,268.03	D. 742,718.36
Total Operating Expenses	$44,499,164.96	$44,531,257.03	D. $32,092.07
Net Revenue from Operations	$33,545,219.42	$28,176,610.02	I. $5,368,609.40
Ratio of Operating Expenses to Total Operating Revenue	57.02%	61.25%	D. 4.23%
Federal, State and Local Taxes	$8,840,000.00	$7,768,000.00	I. $1,072,000.00
Uncollectible Revenue Charges	7,105.29	10,663.90	D. 3,558.61
Net Rental of Equipment and Joint Facilities—Credit	2,605,703.44	2,120,340.24	I. 485,363.20
Net Railway Operating Income	$27,303,817.57	$22,518,286.36	I. $4,785,531.21
Other Income — (Mainly Interest on Investments)	1,332,694.79	1,738,779.50	D. 406,084.71
Gross Income from all sources	$28,636,512.36	$24,257,065.86	I. $4,379,446.50
Interest Paid on Bonds and Equipment Obligations	$2,839,913.84	$3,537,910.83	D. $697,996.99
Miscellaneous Deductions	440,746.47	438,973.61	I. 1,772.86
Net Income	$25,355,852.05	$20,280,181.42	I. $5,075,670.63
Dividends on Adjustment Preferred Stock—$4.00 per share	$919,692.00	$919,692.00	.....
Extra Dividend on Common Stock—$2.00 per share	2,812,966.00	2,812,966.00	.....
Income Balance	$21,623,194.05	$16,547,523.42	I. $5,075,670.63

(*Continued on next page*)

[Advertisement]

Operating Results—Continued

	1935	1934	Increase or Decrease
Dividends on Common Stock—$10.00 per share	$14,064,830.00	$14,064,830.00	.....
Funded Debt outstanding at end of year	52,139,531.92	86,909,531.92	D.$34,770,000.00
Capital Stock outstanding at end of year	163,640,600.00	163,640,600.00	.....
Investment in Road and Equipment at end of year	456,405,352.93	454,318,927.66	I. 2,086,425.27

Gross Operating Revenues for 1935 were $78,044,384.38, an increase of $5,336,517.33, or 7.34 per cent, due in part to emergency freight rates which became effective April 18, 1935. Operating Expenses were $44,499,164.96, a decreasee of $32,092.07, or 0.07 per cent, although all accounts were affected adversely by complete restoration of wage deductions and increased cost of materials and supplies. Maintenance of Way and Structures increased due to larger rail and other renewals, while Maintenance of Equipment decreased through economies and chargings made in 1934 for retirement of obsolete equipment. Transportation Expenses increased principally because of additional business and higher wages cost, and General Expenses decreased mainly by reason of credit adjustments after the Railroad Retirement Act of 1934 was declared unconstitutional.

Net Revenues from Operations were $33,545,219.42, an increase of $5,368,609.40, or 19.05 per cent. Income Balance, after paying the regular 4 per cent dividend of $919,692.00 upon the Adjustment Preferred Stock and an extra dividend of $2.00 per share upon the Common Stock, $2,812,966.00, was $21,623,194.05, an increase of $5,075,670.63, or 30.67 per cent. Quarterly dividends of $2.00 per share, a total of $8.00 per share, were paid on the Common Stock and charged to Surplus, and the extra dividend of $2.00 per share on the Common Stock was charged against earnings for 1935 and paid March 19, 1936.

There was no change in the outstanding Capital Stock, which represented 75.84 per cent of total outstanding capitalization.

Funded Debt was reduced $34,770,000 through redemption of $34,668,000 Divisional First Lien and General Mortgage 4 per cent Bonds and $102,000 Convertible 10-25 Year 4½ per cent Bonds. Funded Debt represented 24.16 per cent of total outstanding capitalization.

The investment in property used in transportation service was $328,437,734.23, an increase of $2,141,191.22.

The investment in equipment owned was $127,967,618.70, a decrease of $54,765.95. During 1935 the Company received 18 all-steel air-conditioned passenger train cars, 10 all-steel cement cars and 6 units of miscellaneous equipment, and retired 25 steam locomotives, 232 freight train cars and 44 work equipment cars, chiefly because of obsolescence. 12 passenger coaches and 4 diners were reconditioned and air-conditioning apparatus installed, making a total of 41 air-conditioned cars in service at the close of the year. The Company's equipment at end of year consisted of 586 steam locomotives, 16 electric locomotives, 313 passenger train cars, 45,952 freight train cars and 1,838 work and miscellaneous units.

Comparison of traffic and operating revenue figures with those for 1934 shows the following changes:

Number of passengers	1,431,040 Inc.	85,661	6.37 per cent
Average haul of passengers	65.11 miles Inc.	1.26 miles	1.97 per cent
Revenue from passenger fares	$1,841,601.75 Inc.	$61,569.67	3.46 per cent
Average rate per passenger per mile	1.977 cents Dec.	.095 cents	4.58 per cent
Revenue freight carried	39,345,242 tons Inc.	1,685,131 tons	4.47 per cent
Average haul of freight	278.63 miles Inc.	.92 miles	.33 per cent
Revenue from freight transportation	$73,661,074.79 Inc.	$5,044,004.99	7.35 per cent
Average rate per ton per mile	.672 cents Inc.	.016 cents	2.44 per cent
Average tons of revenue freight per train mile	1,541.19 Inc.	34.92 tons	2.32 per cent
Shipments of coal	31,578,626 tons Inc.	1,156,050 tons	3.80 per cent
Shipments of coke	493,787 tons Inc.	63,546 tons	14.77 per cent
Shipments of ore	341,300 tons Dec.	38,855 tons	10.22 per cent
Shipments of pig and bloom iron	14,845 tons Dec.	6,174 tons	29.37 per cent
Shipments of lumber	594,444 tons Inc.	183,385 tons	44.61 per cent

The more important additions and betterments consisted of extension of Buchanan Branch, in Buchanan County, Va., a distance of 14½ miles; construction of Dismal Creek Branch, in Buchanan County, Va., 24 miles in length; laying 212.78 miles of track with 131-lb. rail; placing 173,746 cubic yards of standard ballasting in main line tracks; construction at Lambert Point, Va., of new low-level coal pier, equipped with elevating car dumper for transferring coal direct from road cars to vessels, to be completed and placed in operation April 1, 1936; construction of concrete highway bridges at Christiansburg and Abingdon, Va., and reinforced concrete box culverts replacing bridges at Villamont and Roanoke, Va.; elimination of eleven grade crossings, one by overhead bridge and ten by abandonment of lines; and reconstruction of signal pole lines from North Roanoke to Loch Laird, Va., and from Roanoke, Va., to Price, N. C.

Ninety-six new industries located on the Company's line, producing foods, textiles, lumber, chemicals, petroleum, machinery and miscellaneous products, with a total capitalization of $5,611,300, and employing 4,018 persons. Forty-nine additions to established plants were completed, costing $4,552,000, and employing 1,689 persons. Three new coal mines were placed in operation and three abandoned. At the close of the year there were 125 companies organized for producing coal and coke on the Company's lines, with a total of 191 mines, of which 149 mines were in actual operation.

The Railroad Retirement Act of 1935, intended to meet the unconstitutionality of the 1934 Act, and the Act levying an income tax upon employees and an excise tax upon carriers, in the amount of 3½ per cent each upon employee compensation, not in excess of $300 per month, to provide annuities for retired employees, both effective March 1, 1936, are estimated to cost the Company $1,000,000 in 1936.

The Social Security Act, effective January 1, 1936, levies an excise tax upon employers at the rate of 1 per cent per annum for 1936, 2 per cent per annum for 1937 and 3 per cent per annum for 1938 and thereafter, to provide for employees who may become unemployed, which is estimated to cost the Company $288,000 in 1936.

Condensed General Balance Sheet—December 31, 1935

	1935	Increase or Decrease
ASSETS		
Investments:		
Investment in Road	$328,437,734.23	I. $2,141,191.22
Investment in Equipment Owned	127,967,618.70	D. 54,765.95
Improvements on leased railway property	17,473.97	I. 17,473.97
Sinking Funds and other Deposits	1,644,527.38	I. 156,473.55
Miscellaneous Physical Property	5,246,595.52	D. 1,711.88
Investment in Affiliated Companies	8,466,700.59	D. 505,970.79
Other Investments	20,323,664.90	D. 24,331,860.92
Total Investments	$492,104,315.29	D.$22,579,170.80
Current Assets:		
Cash	$8,841,491.84	D. $755,312.37
Material and Supplies	5,950,160.43	I. 778,875.38
Other Current Assets	6,033,032.24	I. 734,376.30
Total Current Assets	$20,824,684.51	I. $757,939.31
Deferred Assets	$13,658,703.77	I. $130,358.90
Norfolk and Western-Pocahontas Joint Bonds, Relief Fund Securities, etc.		
Unadjusted Debits	3,141,090.41	D. 557,016.52
Total	$529,728,793.98	D.$22,247,889.11
LIABILITIES		
Capital Stock:		
Adjustment Preferred	$22,992,300.00	.....
Common	140,648,300.00	.....
Total Capital Stock	$163,640,600.00	.....
Long Term Debt:		
Mortgage Bonds	$46,053,500.00	D.$34,668,000.00
Convertible Bonds	.....	D. 102,000.00
Miscellaneous	6,086,031.92	.....
Total Long Term Debt	$52,139,531.92	D.$34,770,000.00
Current Liabilities	$7,660,315.86	I. $404,320.75
Traffic and Car Service Balances, Accounts Payable, Interest and Dividends Matured and Unpaid, Unmatured Dividends Declared, etc.		
Deferred and Joint Liabilities	$13,659,552.20	I. $281,152.84
Norfolk and Western-Pocahontas Joint Bonds, Relief Fund Securities, etc.		
Unadjusted Credits:		
Accrued Depreciation	$61,795,114.44	I. $3,039,584.90
Tax Liability, Insurance Reserves, etc.	9,782,874.56	I. 1,477,495.16
Total Unadjusted Credits	$71,577,989.00	I. $4,517,080.06
Corporate Surplus:		
Sinking Fund Reserves	$1,193,239.14	I. $190,597.46
Additions to Property through Income and Surplus—Road	21,425,242.41	D. 3,715.02
Equipment	23,305,326.27	.....
Funded Debt Retired through Income and Surplus	47,234,000.00	I. 32,999,000.00
Profit and Loss Balance	127,892,997.18	D. 25,866,325.20
Total Corporate Surplus	$221,050,805.00	I. $7,319,557.24
Total	$529,728,793.98	D.$22,247,889.11

By order of the Board of Directors.

A. C. NEEDLES,
President.

[Advertisement]

Forty-first Annual Report of the Atchison, Topeka & Sante Fe Railway Company

OFFICE OF
THE ATCHISON, TOPEKA AND SANTA FE RAILWAY SYSTEM,
120 Broadway, New York City.
February 25, 1936.

To the Stockholders:

Your Directors submit the following report for the fiscal year January 1, 1935, to December 31, 1935, inclusive.

INCOME AND PROFIT AND LOSS STATEMENT

The following is a summary of the transactions of the System for the years ending December 31, 1934, and 1935:

	1934	1935
Operating revenues	$128,093,947.63	$135,686,391.88
Operating expenses	102,083,479.45	109,423,483.77
Net operating revenues	$26,010,468.18	$26,262,908.11
Operating ratio	79.69%	80.64%
Railway tax accruals	$10,352,827.70	$10,476,178.76
Uncollectible railway revenues	35,222.57	47,754.01
Equipment and joint facility rents	393,099.33	35,623.08
Net railway operating income	$15,229,318.58	$15,703,352.26
Other income	4,950,532.15	7,046,613.96
Gross income	$20,179,850.73	$22,749,966.22
Miscellaneous tax accruals	60,604.50	95,957.89
Rent for leased roads and other charges	314,565.42	296,641.42
	$19,804,680.81	$22,357,366.91
Interest on bonds, including accrued interest on adjustment bonds	12,803,366.80	12,803,051.80
Net corporate income representing amount available for dividends and surplus)	$7,001,314.01	$9,554,315.11
Surplus to credit of Profit and Loss, December 31, 1934		302,466,346.06
Total		$312,020,661.17
Appropriations for the year:		
DIVIDENDS ON PREFERRED STOCK—		
No. 74 (2½%) paid August 1, 1935	$3,104,320.00	
No. 75 (2½%) paid February 1, 1936	3,104,320.00	$6,208,640.00
DIVIDEND ON COMMON STOCK—		
No. 110 (2%) paid September 3, 1935		4,854,120.00
S. F. & S. J. V. Ry. Co. Bonds Sinking Fund		10,800.00
		11,073,560.00
Surplus appropriated for investment in physical property	$39,951.85	
Loss on retired road and equipment	2,229,997.26	
Miscellaneous debits—Net	425,943.33	$2,695,892.44
Donations in connection with industry tracks, etc		39,951.85
		2,655,940.59
Surplus to credit of Profit and Loss, December 31, 1935		$298,291,160.58

COMPARISON OF OPERATING RESULTS

The following is a statement of revenues and expenses of the System for the year ending December 31, 1935, in comparison with the previous year:

	Year ending Dec. 31, 1935	Year ending Dec. 31, 1934	Increase or *Decrease*
OPERATING REVENUES:			
Freight	$109,685,779.50	$104,720,630.36	$4,965,149.14
Passenger	13,447,074.36	11,970,641.70	1,476,432.66
Mail, express, and miscellaneous	12,553,538.02	11,402,675.57	1,150,862.45
Total operating revenues	$135,686,391.88	$128,093,947.63	$7,592,444.25
OPERATING EXPENSE:			
Maintenance of way and structures	$18,726,710.38	$16,537,881.01	$2,188,829.37
Maintenance of equipment	33,134,512.05	30,843,587.50	2,290,924.55
Traffic	4,796,022.57	4,467,868.07	328,154.50
Transportation—Rail line	48,423,928.85	43,816,636.85	4,607,292.00
General	*4,323,191.81	6,396,937.47	*2,073,745.66*
Transportation for investmenr—Cr.	*176,074.78*	*96,852.60*	*79,222.18*
Total operating expenses	$109,423,483.77	$102,083,479.45	$7,340,004.32
Net operating revenue	$26,262,908.11	$26,010,468.18	$252,439.93
Railway tax accruals	10,476,178.76	10,352,827.70	123,351.06
Uncollectible railway revenues	47,754.01	35,222.57	12,531.44
Railway operating income	$15,738,975.34	$15,622,417.91	$116,557.43
Equipment rents—Net—Cr.	*677,572.25*	*330,223.37*	*347,348.88*
Joint facility rents—Net—Dr.	713,195.33	723,322.70	*10,127.37*
Net railway operating income	$15,703,352.26	$15,229,318.58	$474,033.68
Ratio of Operating Expenses to Operating Revenues	80.64	79.69	.95

*Includes credit of $1,024,051.57 cancelling accruals in 1934 under the Railroad Retirement Act of that year.

TREASURY

Neither your Company nor any of its wholly owned affiliated railway companies has any notes or bills payable outstanding in the hands of the public, nor has any one of them borrowed any money from any sources whatsoever, nor deferred the payment of any of their bills or other obligations.

The Company held in its treasury at December 31, 1935, $34,223,929.27 cash, and in addition owned $26,731,350.00 of United States Government securities which are carried at cost of $26,747,121.15 in the general balance sheet.

TAXES

Federal, state, local, and miscellaneous railway tax accruals for the year 1935 aggregate $10,476,178.76, an increase of $123,351.06 compared with the year 1934. A comparison of these accruals for the two years is presented in the following table:

	1935	1934	Increase or *Decrease*
FEDERAL TAXES:			
Income	$300,000.00	$119,000.00	$181,000.00
Capital stock	416,400.00	356,778.00	59,622.00
Miscellaneous	36,183.39	32,485.57	3,697.82
Total	$752,583.39	$508,263.57	$244,319.82
STATE, LOCAL, AND MISCELLANEOUS	9,723,595.37	9,844,564.13	*120,968.76*
Grand total	$10,476,178.76	$10,352,827.70	$123,351.06

GENERAL

For the calendar year 1935 the freight car loadings were 1,222,997, being slightly less than for the calendar year 1934, but the average revenue per car in 1935 was $5.29 greater than in 1934. An excessively heavy movement of livestock in 1934 at reduced emergency rates because of the drought accounts for the decline in carloading, as all freight other than livestock shows a small increase over 1934. The emergency rates in 1934 account partly for 1935 showing larger earnings per car.

There was an increase in miles traveled by passengers in 1935 over 1934 of 17.07 per cent, and an increase in passenger revenues of 12.33 per cent. The increase in passenger travel was in part the result of improved business conditions and in part attributable to the convenience and comfort of air-conditioned equipment.

Your Company has been considering for some time a program for faster passenger service. It has acquired a 3600 horse power Diesel electric locomotive in two units of 1800 horse power each which has been undergoing a series of tests preliminary to being assigned to regular service. A small fire on a trial run crippled one unit and postponed the service use of the complete engine, but it is hoped to have it in service by the time this report reaches the stockholders. The other unit is now being used in service. The entire performance has been of a high order and this general type of locomotive promises to be used extensively in the future. This locomotive is designed to handle standard passenger train equipment. Study is also being made of light weight equipment. A stainless steel coach designed by the Company's engineers has just been placed in service and a Cor-ten steel coach will soon be completed for a similar service test.

Appropriations aggregating $2,200,000 were made for 1935 and 1936 to continue the general policy of reducing curvature along the transcontinental main line. Under this program curvature is being eliminated or reduced to make possible more sustained high speed operation with increased safety and comfort. This will reduce transportation expense, although the retirements and equivalent replacements resulting from the reduction in curvature are chargeable to operating expenses and will exceed the immediate saving in transportation.

Gross expenditures for additions and betterments in 1935 were $4,250,759. This represented an increase of $1,965,645 over the preceding year, but was limited to the necessary requirements. The 1936 program will be somewhat larger than last year and includes 500 50-ton box cars and 50 70-ton hopper cars in the way of new equipment, the reinforcing of 300 stock cars and the rebuilding of 500 automobile cars and 200 refrigerator cars.

The use of air-conditioned cars has contributed so much to the comfort of passenger travel that 15 Pullman standard sleeping cars, 15 Pullman tourist sleeping cars, and 48 cars for coach travel will be so equipped this year, providing substantially complete air-conditioned day coach and sleeping car equipment for all important trains.

Your Directors take pleasure in again expressing their appreciation of faithful and efficient service rendered by officers and employes.

S. T. BLEDSOE, *President.*

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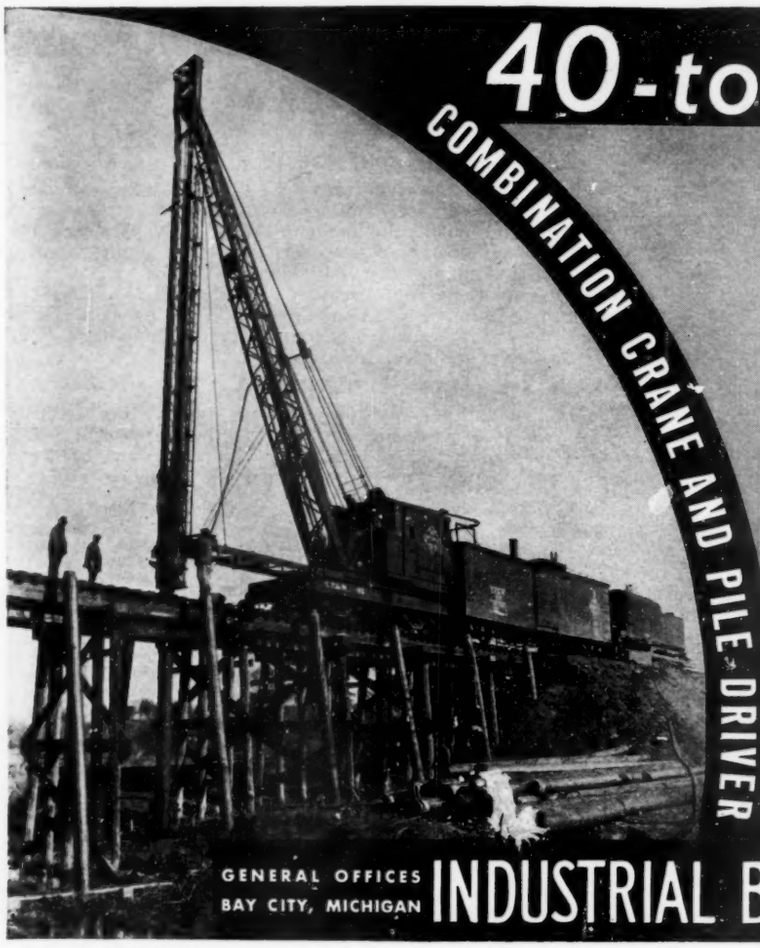

40-ton Diesel . .

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A fast, powerful crane for all kinds of bucket, hook or magnet service.

Sustained travel speeds up to 20 miles per hour, with ample power for switching loaded cars.

Direct drive to travel, with crab entirely disengaged.

Power take-off by means of a helical worm gear drive, mounted on anti-friction bearings and running in an oil-tight case.

Quick-folding, pile driver leaders arranged to drive straight or batter piles.

These are but a few of the outstanding developments of No. 8 Diesel crane design which contribute to the substantial reduction in operating costs of modern locomotive cranes.

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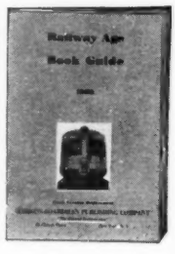

Here is a handy reference booklet on railroad books that are of interest to readers of "Railway Age." In it are described practically all of the books published during the past decade that are in print. They are classified under subject headings and arranged in chronological order. A title index in the back facilitates quick reference.

SUBJECT INDEX

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